August 1963 Time Dist Data

Date	Dist from OAHU 1200	Dist from OAHU 2400	Dist. from Johns. 1200	Dist. from Johns. 2400	S/R	S/S	Miles se-ss	Miles Darkness
1	0	54 WSW	743 ENE	683 ENE		1913	48	48
2	197 WSW	333 WSW	547 ENE	498 ENE	0600	1922	107	67
3	364 WSW	497 WSW	382 ENE	247 ENE	0600	1925	138	105
4	609 WSW	726 WSW	134 ENE	11 E	0600	2000	130	102
5	758 WSW	853 SW	115 SSE	193 S	0623	2011	131	90
6	981 SW	9 23 SW	304 SSW	242 SSW	0630	2000	134	105
7	820 SW	838 SW	127 S	103 SSW	0630	2016	128	93
8	944 SW	1010 SW	221 SW	279 SSW	0635	2015	118	98
9	941 SW	855 SW	193 SW	110 SW	0641	2030	96	85
10	873 WSW	986 WSW	132 SW	241 SW	0631	2024	126	81
11	1024 WSW	930 WSW	278 WSW	190 W	0642	2025	122	100
12	828 WSW	636 WSW	85 W	12 N	0631	2020	112	89
13	635 WSW	534 WSW	111 ENE	214 E	0628	2000	118	—
14	430 WSW	335 WSW	323 ENE	432 E	0605	1945	115	—
15	255 SSW	100 SSW	586 ENE	643 ENE	0555	1915	140	—

						CLOUDS AND OBSCURING PHENOMENA																				
						Lowest Level			Second Level				Third Level				Fourth Level				Total Opaque Sky Cover	SEA WATER (°F)	WAVES Direction Period Height	
TIME (GCT)	Station Pressure (INS)	Dry Bulb (°F)	Wet Bulb (°F)	REL. HUMID (%)	Total Sky Cover	AMT.	Type & Dir.	Height	AMT.	Type & Dir.	Height	Current Prin. Total	AMT.	Type & DIR	Height	Summ. Prin. Total	AMT.	Type & Dir.	Height					
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	40a	40B		
2000 I																								
1200	30.035	80.3	73.1	71	7	2	Cu	20	2	Ac	80	4	3	Ci	U	7	0			U	84	090303		
0200 II																								
1200	30.030	76.0	73.6	80	3	2	Cu	15	1	Ac	70	3	0			3	0			3	83	100703		
0800 II																								
1200	30.020	78.2	73.2	79	4	2	Cu	20	1	Ac	70	3	1	Ci	/	4	0			3	84	110805		
1400 II																								
0000	30.005	82.5	74.2	65	7	2	Cu	20	1	Ac	90	3	4	Ci	U	7	0			3	83	151004		
2000 II																								
0000	30.005	78.5	74.9	84	10	8	Cu	15	4	Sc	35	10	U			10				10	84	120805		
0200 III																								
1200	30.000	78.0	73.3	88	10	6	Cu	15	4	Sc	35	10	U			10				10	87	140805		
0800 III																								
1200	29.985	77.8	73.5	82	7	1	Cu	20	3	Sc	35	4	1	Ac	90	5	2	Ci	U	5	84	120503		
1400 III																								
0000	29.985	82.2	73.4	67	5	3	Cu	20	2	Ci	/	5	0			5	0			3	85	121003		
2000 III																								
0000	29.940	79.9	73.2	73	6	2	Cu	20	4	Ci	U	6	0			6	0			2	85	131303		
0200 III																								
1200	29.940	79.2	73.3	76	6	3	Cu	15	2	Ac	70	5	1	Ci	U	6	0			5	84	121003		
0800 IV																								
1200	29.915	80.2	73.5	73	2	1	Cu	20	1	Ci	/	2	0			2	0			3	85	121004		
1400 IV																								
0000	29.880	78.6	73.1	70	3	2	Cu	20	1	Ci	/	3	0			3	0			2	86	121003		
2000 IV																								
0000	29.915	80.7	74.2	76	6	4	Cu	20	2	Ci	/	6	0			6	0			4	84	121003		
0200 V																								
1200	29.915	79.2	74.2	77	3	3	Cu	20	0			3	0			3	0			3	85	121003		
0800 V																								
1200	29.880	82.2	75.1	79	3	3	Cu	16	0			3	0			3	0			3	74	121003		
1400 V																								
1200	29.855	84.1	75.5	76	1	1	Cu	18	0			1	0			1	0			1	86	110105		
2000 V																								
0000	29.925	84.6	74.4	72	3	3	Cu	16	0			3	0			3	0			3	76	100703		
0200 VI																								
1200	29.880	83.0	74.0	68	1	1	Cu	15	0			1	0			1	0			1	86	100702		
0800 VI																								
1200	29.880	85.2	75.6	72	2	2	Cu	20	0			2	0			2	0			2	87	100703		

Zulu 2

Zulu

Position 1A	Course 1B	SPD 1C	TIME 2	Sky # Ceiling Hundreds of Feet 3	Visibility (NAUTICAL) 4	SEA Level Press (BS) 6	TEMP (°F) 7	Dew pt. (°F) 8	WIND Direct 9	WIND Speed KTS 10
12159	245	10	0600	20 Φ 70 Φ U Φ	10	171	80	70	←	10
12860 X	245	10	1200	15 Φ 70 Φ	10	169	73 (74?)	72	←	11
12060	245	10	1800	20 Φ 70 Φ	10	166	78	71	← ↙	14
12061	247	10	0000	20 Φ 90 Φ 15 Φ	10	161	83	71	← ↖	9
11961 X	200	1	0600	E 15 Φ 35 Φ	6	160	79	74	← ↙	10
11962 X	250	10	1200	E 15 Φ 35 Φ	6	158	76	72	↖	10
11963	247	10	1800	20 Φ 30 Φ 70 Φ U Φ	12	153	78	72	←	12
11964	250	9	0000	20 Φ / Φ	10	154	82	70	← ↖	10
11865 X	250	9	0600	20 Φ U Φ	10	138	80	70	← ↖	11
11866 X	250	9	1200	20 Φ 70 Φ U Φ	10	138	79	71	← ↖	11
11867	247	9	1800	20 Φ / Φ	10	130	80	71	← ↖	11
11768	247	10	0000	20 Φ / Φ	10	137	83	73	← ↖	10
11769 X	248	10	0600	20 Φ U Φ	10	118	80	72	←	11
11769 X	248	10	1200	20 Φ	10	125	80	72	←	12
11869	163	10	1800	16 Φ	10	111	80	73	←	16
11567	162	10	[illegible]	10 Φ	10	109	83	75	←	20
11869 X	[illegible]	10	[illegible]	16 Φ	10	110	82	76	←	12
11370	[illegible]	10	[illegible]	15 Φ	10	117	80	74		C
11571	[illegible]	10	[illegible]	20 Φ	10	108	[illegible]	[illegible]	↙	13

Φ Sca. 6
Φ more 6
Φ overcast 1,
U unknown height ceiling
/ unknown height

Zulu 3

Zulu 4

Zulu 5

Zulu 5

Table E

TIME (GCT)	Position	Course	Spd	Visibility nautical miles	Barometric pressure MBS	Temp °F	Dew Pt °F	WIND Direct	WIND Speed
1400									
DR C	11804	083	9	10	125	80	73	←	6
1500									
0100	11866			10	125	81	72	←	7
1600									
0200	11866			10	122	80	72	←	5
1700									
0300	11863			6	121	78	72	←	5
1800									
0400	11863			6	120	80	73	←	9
1900									
0500	11863			10	123	79	73	←	9
2000									
0600	11863			10	127	79	73	←	11
2100									
0700	11863			10	134	78	74	←	9
2200									
0800	11863			10	140	78	72	←	12
2300									
0900	11863			10	144	78	73	←	7
2400									
1000	11862			10	145	80	72	←	9
0100	XV								
1100	11862			10	145	80	72	←	8
0200	↓								
1200	11862			10	131	76	73	←	19
0300									
1300	11862			10	128	80	73	←	10
0400									
1400	11862			10	128	80	70	←	10
0500									
1500	11862			10	132	80	70	←	10
0600									
1600	11862			10	132	80	70	←	10
0700									
1700	11861			10	131	80	70	←	10
0800									
1800	11861			10	132	79	71	←	8
0900									
1900	11861			10	133	80	71	↖	8
1000									
2000	11861			10	136	81	70	←	8
1100									
2100	11861			10	136	81	71	←	9
1200									
2200	11861			10	132	80	70	←	13
1300									
2300	11861	√	√	10	125	80	70	←↖	13

July 15

TIME EST	Station Pressure	Dry Bulb	Wet Bulb	RH	Total sky cover	Total opaque sky cover	Sea water	Winds
0000	29.930	80.2	75.6	78	6	5	86	12/003
0100	29.900	81.2	74.7	74	5	4	86	120803
0200	29.890	80.3	74.1	75	4	3	86	120803
0300	29.890	77.8	73.9	83	8	8	86	110803
0400	29.885	80.0	74.9	79	8	8	86	110803
0500	29.895	78.8	74.5	82	5	4	86	110803
0600	29.910	79.1	74.8	83	8	7	86	110803
0700	29.935	78.0	74.9	86	2	0	85	110803
0800	29.950	78.0	74.5	82	2	2	85	110803
0900	29.955	78.2	74.6	83	5	5	85	110803
1000	29.960	80.0	74.0	75	4	4	85	110803
1100	29.960	80.0	74.0	75	2	2	85	110803
1200	29.950	76.8	73.8	87	4	4	85	110803
1300	29.910	80.6	75.0	79	8	8	85	110803
1400	29.910	80.0	73.0	71	3	3	85	110803
1500	29.920	80.0	73.0	71	3	3	85	110803
1600	29.920	80.0	73.0	71	3	3	85	110803
1700	29.920	81.0	73.0	71	4	4	85	110803
1800	29.920	79.0	73.6	77	5	4	84	12/003
1900	29.925	79.7	73.8	76	8	8	84	12/003
2000	29.935	81.1	73.0	68	9	9	84	12/003
2100	29.935	80.8	74.0	72	9	9	84	13/00K
2200	29.930	79.9	73.0	72	6	6	84	13/00K
2300	29.900	80.1	73.0	71	3	3	84	13/00K

AUGUST

1st Day

Time at Harbor entrance - 1405

Number miles from 1405 to 1915 - 45 mi

Distance from 1915 to nearest land on Oahu = 35 mi.

Distance From 1915 to Johnston Island 672 mi

2nd Day

Position at 0600 20°16 - 160°07' Position 1922 = 19°29' - 161°43'

miles from 0600 until 1922 = 107 mi

distance from 0600 to nearest land = 90 mi to NIIHAU

distance from 0600 to Johnston Island = 595 mi

distance from 1922 hr. to nearest land = 168 mi to NIIHAU

distance from 1922 hr to Johnston Is. 487 mi

3rd Day

Position at 0600 - 19°06' - 162°38' Position at 1925 18°22' - 164°49'

miles from 0600 to 1925 138 mi

distance from 0600 to Main chain Is = 212 mi

distance from 0600 to Johnston Is. 427 mi

distance from 1922 hr. to Main chain Is = 335 mi

distance from 1922 hr to Johnston = 292 mi

4th Day

Position at 0600 17°51' 166°31' 2000 - 17°01' - 168°35'

Miles between the two points 130 mi.

Distance to Main Islands from 0600 453 mi to Niihau

" " Johnston 0600 180 mi

" " Main Island at 2000 hr. 577 mi. Niihau

" " to Johnston at 2000 hr. 52 mi

Time arrival at Johnston (6 mi. SSE) 0130 Morning 5th Day

Time at Pt. Basalt - Aug 5 1650 (17 mi. down leg from Basalt)

Miles to Johnston 153

9 mi NW of Rhyolite

Time arrival at PT Rhyolite Aug 6. 1200

mile to Johnston 302

Time arrival at PT. Obsidian Aug 6 about 1615

mile to Johnston 355

5 mi. NW of PT Olivine

Time arrival at PT. Olivine Aug 7. 1535

mile to Johnston 96

5 mi. NE Diorite

Time Arrival at PT. Diorite Aug 7 2016

mile to Johnston 68

7 mi. S. W Pt Quartz

Time arrival at Pt. Quartz Aug 8 2015

miles to Johnston 281

on point

Time arrival at Pt. Andesite Aug 9, 0165

miles to Johnston 272 miles

1741
1506

			Miles Between Points	Miles to Johnston Island
Monday #5				
0623 =	15°55'	169°03'	131 mi.	51
2011 =	13°58'	169°20'		169
Tuesday #6				
0630 =	13°52'	170°42'	134 mi	243
2000	12°59'	171°28'		254
Wednesday #7				
0630 :	14°10'	170°28' ✓	128 mi	167
2016 :	15°41'	169°58'		68
Thursday #8				
0635 :	16°37'	171°11'	118 mi	163
2015 :	13°11'	172°34'		286
Friday #9				
0641 :	14°27'	172°40'	96	232
2030 :	15°34'	171°31'		139
Saturday				
0631 :	16°40'	171°02'	126	92
2024 :	15°21'	172°40'		206
Sunday #11				
0642 :	14°45'	173°55'	122	286
2025 :	16°11'	173°06'		216
Monday #12				
0631 :	16°50'	171°53'	117	142 mi
2020 :	16°53'	170°01'		31 mi

171 22
12 10
171 51
1235

170 26 16930 16958
14 10 15 09 15 11

	miles between points	miles to Johnston Isl	miles to nearest LAND NIIHAU
Tuesday #13			
0628: 17°05' - 168°36'	118	63	560
2000: 17°23' - 166°35'		181	455
Wednesday #14			
0605: 17°41' 165°03'	115	264	344
1945: 17°55' 163°04'		379	293
Thursday #15			
0555: 18°11' 161°37'		463	240

Aug 5-

1650
1944 } 23mi } 28 mi.
2011

10
11
4
60/240
21

Aug 11

dark 2025: 16°11' 173°06'

Aug 12

39 { 0631: 16°50' 171°53'
1030

39 mi to Pt. Pyroxene
or edge of grid

Pt. Pyroxene

2026

30
9 20
60/540
50
590

112
39
/
73

H 1

1600	21°05'	158°03'
1700	21°00'	158°09'
1733	20°59'	158°16'
1758	20°59'	158°21'
1900	20°55'	158°31'
2000	20°52'	158°42'
2100	20°47'	158°52'
2200	20°43'	159°02'
2300	20°39'	159°11'
2400	20°35'	159°21'

#2

0700	20°27'	159°44'
0400		
0440	20°22'	159°57'
0613	20°10'	160°07'
0725	20°08'	160°20'
1021	19°56'	160°46'
1100	19°53'	160°51'
1200	19°52'	161°00' ✓
1230	19°50'	161°06'
1300	19°47'	161°12'
1400	19°41'	161°26'
	19°35'	
1500		161°41'
1730	19°31'	161°48'
1915	19°29'	161°43'
2400	19°27'	161°49'

1730 1707 engines stopped
2330 adrift

20.0J 160.2W

-4 5

0200	19°20'	162°06'
0400	19°14'	162°24'
0600	19°06'	162°38'
0700	19°01'	162°50'
0805	18°59'	163°00'
0900	18°55'	163°07'
1000	18°52'	163°16'
1100	18°48'	163°27'
1200	18°45'	163°35' ✓
1300	18°43'	163°45'
1400	18°37'	163°57'
1500	18°34'	164°07'
1600	18°30'	164°16'
1700	18°27'	164°26'
1800	18°23'	164°35'
1915	18°22'	164°49'
2000	18°19'	164°57'
2200	18°12'	165°16'
2400	18°05'	165°35'

#4

0200	17°58'	165°55'
0400	17°52'	166°14'
0620	17°51'	166°31'
0810	17°46'	166°56'
0900	17°42'	166°59'
1000	17°38'	167°08'
1100	17°34'	167°15'
1208	17°31'	167°24'
1300	17°27'	167°32'
1400	17°23'	167°41'
1500	17°19'	167°52'
1634	17°15'	168°03'
1700	17°11'	168°11'
1800	17°07'	168°20'
1830	17°05'	168°29'
2000	17°01'	168°35'
2025	17°00'	168°39
2045	initial point	
2100	16°56'	168°45'
2200	16°52'	168°55'
2300	16°48'	169°04'
2400	16°40'	169°14'

Zulu 7

Station	Ceiling	SLP	Time (GCT)	Sky & Ceiling Hundreds of Feet	Visibility (MPH)	Visibility (MBS)	TEMP	DEW Point	WIND Direction	WIND Speed KNTS
1A	1B	1C	2	3	4	6	7	8	9	10
X										
11272	31E	10	0000	15 ⊕ E20 ⊕ 90 ⊕	10	108	83	74	↙	15
11371	04S	10	0600	15 ⊕ E20 ⊕ 100 ⊕ U ⊕	10	106	82	76	←↖	18
11471	04S	9	1200	15 ⊕ 20 ⊕	10	120	80	76	↖	22
11470	05O	9	1800	15 ⊕ E100 ⊕	10	118	81	76	←	16
11470	05O	9	2000	10 ⊕ 100 ⊕ / ⊕	10	133	82	75	←↖	19
11570	05O	9	2100	15 ⊕ 100 ⊕ / ⊕	10	137	82	76	←↖	22
11570	05O	9	2200	15 ⊕ 100 ⊕ U ⊕	10	137	83	76	←↖	19
11570	05O	9	2300	10 ⊕ 130 ⊕ 100 ⊕ / ⊕	10	132	83	76	←↖	18

Time	Station Pressure (INS)	DEW Point	WET Bulb	R.H %	Tot Sky Cover	Amt	Lowest Layer Type	Lowest Layer Height	Second Layer Amt	Second Layer Type	Second Layer Height	Third Layer Amt	Third Layer Type	Third Layer Height	Fourth Layer Amt	Fourth Layer Type	Fourth Layer Height	Ceiling Hundreds of Feet	Visibility Statute Miles	Weather	Obstructions to Vision
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	WOA	WOB
1400 VI																						
0000	29.850	82.1	76.7	76	4	1	Cb	15	2 Cu	E20	6	1	Ac	90	7	0			7	55	09120	
2000 VI																						
0600	29.845	81.7	77.8	54	8	4	Cb	15	2 Cu	E20	6	1	Ac	100	7	1	Ci	U	7	86	10130	
0200 VII																						
1200	29.865	79.8	76.7	87	4	2	Cb	15	2 Cu	20	4	0			4	0			4	86	10100	
0800 VII																						
1800	29.850	80.8	77.2	85	6	5	Cu	15	1	Ac	100	6	0			6	0		6	86	11090	5
1000 VII																						
2000	29.975	82.0	77.0	80	5	3	Cu	10	1	Ac	100	4	1	Ci		5	0		4	86	10060	6
1100 VII																						
2100	29.935	82.4	77.6	80	4	2	Cu	12	1	Ac	100	3	1	Ci		4	0		3	86	10060	5
1200 VII																						
2200	29.935	83.2	77.8	78	6	2	Cu	15	1	Ac	100	3	3	Ci	U	6	0		3	86	10060	5
1300 VII																						
2300	29.920	83.2	77.9	79	5	1	Cb	10	2 Cu	13	3	1	Ac	100	4	1	Ci	/	4	86	10060	5

Zula 8

(GCT) TIME	Position IA	Position IB	SEP	Sky & Ceiling Thunderstorms & Clouds 3	Visibility	SEA Level Press	TEMP	DEW PT	Wind	Spd
1400 VII 0000	11570	055	8	100 150 1000 U0	10	132	83	76	←	13
1500 VII 0100	11570	055	8	150 1000/0	10	132	83	76	←	14
1600 VII 0200	11569	316	8	150/0	10	129	83	75	←	15
1700 VII 0300	11570	318	8	150 U0	10	127	83	75	←	12
1800 VII 0400	11570	318	8	150/0	10	128	82	76	←	12
1900 VII 0500	11570	320	9	150/0	10	128	82	75	←	13
2000 VII 0600	11670	323	9	E15 U0	10	132	81	76	←	17
2100 VII 0700	11670	318	10	E15	10	138	81	75	←	15
2200 VII 0800	11670	321	10	E15	10	143	81	75	←	13
2300 VII 0900	11670	321	10	E15	10	145	81	75	←	13
2400 VII 1000	11570	321	10	E15	10	145	81	75	←	13
0100 VII 1100	11571	321	10	E15	10	138	81	75	←	13
0200 1200	11571	321	10	E15	10	142	81	75	←	13
0300 1300	11571	321	10	E15	10	155	81	77	←	13
0400 1400	11571	321	10	15	10	125	81	77	←	13
0500 1500	11571	321	10	15	10	125	81	77	←	11
0600 1600	11571	321	10	E15	10	125	81	77	←	14
0700 1700	11571	321	10	E15	10	128	81	77	←	15
0800 1800	11471	321	10	15	10	132	82	76	←	13
0900 1900	11471	320	10	15	10	137	82	76	←	14
1000 2000	11471	321	10	E15	10	141	83	76	←	16
1100 2100	11472	320	10	15	10	142	82	76	←	16
1200 2200	11472	320	10	15	10	142	83	77	←	15
1300 2300	11672	319	10	15	700	10	137	82	75	←	16

Table 8

Hour	Sta Pressure	Dry Bulb	Wet Bulb	RH	Total Sky Cover	Cloud Lowest Layer Amt	Type	Height	2nd Layer Amt	Type	Height	Summation Total Sky Cover	3rd Layer Amt	Type	Height	Clear Sky Cover	4th Layer Amt	Type	Height	Opaque Sky Cover	SEA water Temp	Wave
00	29.900	83.4	77.8	78	6	1	Cb	10	3	Cu	15	4	1	Ac	100	5	1	Ci	4	5	86	100605
01	29.920	83.4	77.8	78	5	3	Cu	15	1	Ac	100	4	1	Ci	/	5	0		4	86	100605
02	29.910	83.0	77.4	77	5	4	Cu	15	1	Ci	/	5	0			5	0		4	86	100605
03	29.905	83.0	77.0	76	6	5	Cu	15	1	Ci	u	6	0			6			5	86	100605
04	29.910	81.8	77.2	81	3	2	Cu	15	1	Ci	/	3	0			3			2	86	091003
05	29.910	82.3	77.3	80	4	3	Cu	15	1	Ci	/	4	0			4			3	86	080905
06	29.920	81.0	76.8	84	8	6	Cu	E15	2	Ci	u	8	0			8			6	86	070805
07	29.900	81.1	76.5	81	6	6	"	E15	0			6	0			6			6	86	070805
08	29.950	81.0	76.5	82	6	6	"	E15	0			6	0			6			6	86	070805
09	29.960	81.0	76.5	82	6	6	"	E15	0			6	0			6			6	86	080705
10	29.960	81.0	76.5	82	6	6	"	E15	0			6	0			6			6	86	080705
11	29.960	81.0	76.5	82	6	6	"	E15	0			6	0			6			6	86	090605
12	29.950	80.5	76.3	81	7	7	"	E15	0			7	0			7			7	86	090605
13	29.930	81.0	78.0	87	6	6	"	E15	0			6	0			6			6	86	080603
14	29.900	81.0	78.0	87	5	5	"	15	0			5	0			5			5	85	080603
15	29.900	81.0	78.0	87	5	5	"	15	0			5	0			5			5	85	080603
16	29.900	81.0	78.0	87	6	6	"	E15	0			6	0			6			6	85	080603
17	29.910	81.0	78.0	87	6	6	"	E15	0			6	0			6			6	86	090603
18	29.920	81.8	77.8	84	4	4	"	15	0			4	0			4			4	86	090605
19	29.935	81.7	77.7	84	3	3	"	15	0			3	0			3			3	86	090605
20	29.945	82.7	78.1	81	6	6	"	E15	0			6	0			6			6	86	090605
21	29.950	82.2	77.8	82	4	4	"	15	0			4	0			4			4	86	070605
22	29.950	83.0	78.2	81	4	4	"	15	0			4	0			4			4	86	091005
23	29.935	82.2	77.1	80	4	3	"	15	1	Ac		4	0			4			4	86	091005

Zula 9

GMT TIME	Position	course	SPD	Sky & Ceiling	Visibility	Sea Level Press.	TEMP	DEW Point	Wind Direction	Speed
1400 VIII 00	11472	219	10	15 Ø	10	132	82	76	←↙	14
1500 01	11372	219	10	15 Ø	10	125	82	76	←	13
1600 02	11372	219	10	15 Ø	10	119	83	77	←	13
1700 03	11372	221	10	15 Ø	10	117	83	76	←↙	13
1800 04	11372	221	10	15 Ø	10	114	83	76	←	13
1900 05	11372	221	10	15 Ø	10	117	83	76	←	14
2000 06	11373	221	10	15 Ø	10	117	83	76	←↙	12
2100 07	11373	325	10	15 Ø	10	122	82	75	←	12
2200 08	11373	325	10	15 Ø	10	122	82	75	←↙	14
2300 09	11473	325	10	15 Ø	10	118	81	72	←	19
2400 10	11473	325	10	15 Ø	10	118	81	75	←	15
0100 IX 11	11473	325	10	15 Ø	10	118	81	75	←↙	15
0200 12	11473	325	10	15 Ø	10	124	81	72	←↙	19
0300 13	11473	048	9	E15 Ø	10	121	79	69	←	10
0400 14	11473	048	9	15 Ø	10	104	80	73	←	14
0500 15	11473	048	9	15 Ø	10	108	80	75	←	14
0600 16	11473	048	9	15 Ø	10	108	80	75	←	15
0700 17	11473	048	9	15 Ø 100 Ø	10	112	80	72	←↙	16
0800 18	11473	048	9	15 Ø 100 Ø	10	116	80	72	←↙	16
0900 19	11473	048	9	15 Ø	10	119	82	72	←↙	16
1000 20	11473	050	9	E15 Ø 100 Ø	10	123	80	70	←	18
1100 21	11572	050	8	15 Ø 70 Ø	10	126	80	72	←↙	16
1200 22	11572	050	8	15 Ø E70 Ø	10	127	81	73	←	23
1300 23	11572	050	8	15 Ø 70 Ø/Ø	10	129	83	69	←	20

Zulu 9

Time (GMT)	Station Pressure (MSL)	Dry Bulb	Wet Bulb	RH	Sky Cover	Lowest Layer AMT	Lowest Layer TYPE	Lowest Layer Height	Second Layer AMT	Second Layer TYPE	Second Layer Height	3rd Layer Summation	3rd Layer AMT	Highest Layer Summation	Highest Layer AMT	Total Opaque Sky Cover	Sea Water Temp	Waves
00	29.920	82.4	78.0	83	3	3	Cu	15	0			3	0	3	0	3	86	091005
01	29.900	82.4	78.0	82	3	3	Cu	15	0			3	0	3		3	86	091005
02	29.885	82.9	78.2	81	4	4	Cu	15	0			4	0	4	0	4	86	091005
03	29.875	82.8	78.1	81	4	4	Cu	15	0			4	0	4	0	4	86	091005
04	29.870	82.8	78.1	81	4	4	Cu	15	0			4	0	4	0	4	86	091005
05	29.875	82.8	77.5	79	3	3	Cu	15	0			3	0	3	0	3	86	111005
06	29.875	82.8	78.0	81	5	5	Cu	15	0			5	0	5	0	5	86	080803
07	29.890	81.5	77.0	81	4	4	Cu	15	0			4	0	4	0	4	86	080803
08	29.890	81.7	76.9	83	3	3	Cu	15	0			3	0	3	0	3	86	080503
09	29.850	81.5	76.5	80	3	3	Cu	15	0			3	0	3	0	3	86	080803
10	29.850	81.5	76.5	80	3	3	Cu	15	0			3	0	3	0	3	86	080803
11	29.820	81.5	76.5	80	3	3	Cu	15	0			3	0	3	0	3	86	080803
12	29.900	80.8	76.8	76	3	3	Cu	15	0			3	0	3	0	3	86	080803
13	29.890	79.0	72.0	71	7	7	Cu	15	0			7	0	7	0	7	86	090803
14	29.840	80.0	75.0	80	3	3	Cu	15	0			3	0	3	0	3	86	090803
15	29.850	80.0	76.0	86	4	4	Cu	15	0			4	0	4	0	4	86	090803
16	29.850	80.0	76.0	86	4	4	Cu	15	0			4	0	4	0	4	86	090803
17	29.860	80.4	74.1	74	4	3	Cu	15	1	Ac	100	4	0	4	0	4	86	080905
18	29.875	80.4	74.1	74	4	3	Cu	15	1	Ac	100	4	0	4	0	4	86	080905
19	29.850	82.4	75.1	71	4	4	Cu	15	0			4	0	4	0	4	86	080605
20	29.895	79.9	73.1	72	7	6	Cu	15	1	Ac	100	7	0	7	0	7	86	050605
21	29.905	84.1	75.1	66	4	2	Cu	15	2	Ac	100	4	0	4	0	4	86	050605
22	29.905	81.0	75.0	76	7	2	Cu	15	5	Ac	70	7	0	7	0	7	86	080506
23	29.910	83.0	73.2	63	2	1	Cu	15	1	Ac	70	2	0	2	0	2	86	080806

Zula 10

TIME (GMT)	Position	Course	SPD	Sky & Ceiling	Visibility NAUT mile	SEA LEVEL PRESS	TEMP	Dew pt	WIND Direct	WIND SPD
1400 IX										
0000	11572	050	8	15Ⓞ70Ⓞ1Ⓞ	10	124	83	69	←	20
1500 ↓										
0100	11572	050	8	15Ⓞ70Ⓞ1Ⓞ	10	118	83	69	←	15
1600										
0200	11572	050	8	15Ⓞ/Ⓞ	10	118	87	71	←	16
1700										
0300	11572	050	8	15Ⓞ/Ⓞ	10	109	87	71	←	15
1800										
0400	11572	050	8	15Ⓞ100Ⓞ4Ⓞ	10	105	81	72	←	18
1900										
0500	11572	050	8	15Ⓞ100Ⓞ1Ⓞ	10	108	81	73	←	15
2000										
0600	11671	050	8	15Ⓞ100Ⓞ	10	113	81	72	←	18
2100										
0700	11671	050	8	15Ⓞ	10	118	81	72	←	19
2200										
0800	11671	050	8	15Ⓞ	10	124	81	73	←	19
2300										
0900	11671	050	8	15Ⓞ	10	125	80	73	←	20
2400										
1000	11671	050	8	15Ⓞ	10	125	80	73	←	20
0100 X										
1100 ↓	11671	050	8	15Ⓞ	10	125	80	73	←	20
0200 ↓										
1200	11671	050	8	15Ⓞ	10	122	81	70	←↖	22
0300										
1300	11771	050	8	15Ⓞ	10	125	80	67	←↙	22
0400										
1400	11771	050	8	15Ⓞ	10	111	80	72	←	14
0500										
1500	11771	314	8	15Ⓞ	10	111	80	72	←	12
0600										
1600	11271	314	8	15Ⓞ	10	115	80	73	←	12
0700										
1700	11771	225	10	15Ⓞ	10	115	80	75	←	17
0800										
1800	11771	225	10	15ⓄE100Ⓞ4Ⓞ	10	122	81	73	←↙	13
0900										
1900	11771	225	10	E15Ⓞ00Ⓞ4Ⓞ	10	127	79	74	←↙	21
1000										
2000	11771	225	10	E15Ⓞ100Ⓞ4Ⓞ	10	127	79	74	←↙	21
1100										
2100	11672	225	10	15ⓄE100Ⓞ	10	125	80	72	←↙	16
1200										
2200	11672	225	10	15Ⓞ E100Ⓞ	10	122	82	73	←↙	15
1300										
2200	11672	225	10	15Ⓞ E100Ⓞ	10	111	82	74	←↙	20

2 ula 10

Time	Station Pressure	Dry Bulb	Wet Bulb	RH	Tot Sky Cov	Lowest level Amt	Lowest level Type Cu.	Lowest level Height/Amt	Second level Type Cu.	Second level Height/Amt	3rd layer Summation Amt	4th layer Summation Amt	Total opaque sky cover	Sea water Temp	Wave
00	29.900	83.0	73.2	63	4	2	Cu.	15 1	Ac 70	3 1	4 0	3		86	080506
01	29.880	83.0	73.2	63	3	3	Cu	15 0		3 0	3 0	3		86	080505
02	29.880	82.1	74.2	68	3	2	Cu	15 1	Ci —	3 0	3 0	3		86	080505
03	29.855	82.1	74.2	68	2	1	Cu	15 1	Ci /	2 0	2 0	2		86	080505
04	29.840	81.3	74.9	74	6	4	Cu	15 1	As 100	5 1	6 0	6		86	090505
05	29.850	81.1	75.1	76	3	1	Cu	15 1	As 100	2 1	3 0	3		86	090505
06	29.865	81.2	74.7	74	2	1	Cu	15 1	A=100	2 0	2 0	2		86	090505
07	29.880	81.2	74.1	72	2	2	Cu	15 0		2 0	2 0	2		86	090505
08	29.900	81.1	74.6	76	2	2	Cu	15 0		2 0	2 0	2		86	090505
09	29.900	80.0	75.0	79	2	2	Cu	15 0		2 0	2 0	2		86	090505
10	29.900	80.0	75.0	79	2	2	Cu	15 0		2 0	2 0	2		86	090505
11	29.900	80.0	75.0	79	1	1	Cu	15 0		1 0	2 0	1		86	090505
12	29.890	80.8	73.4	70	1	1	Cu	15 0		1 0	1 0	1		86	090505
13	29.900	80.0	71.0	64	5	5	Cu	15 0		5 0	5 0	5		86	080505
14	29.860	80.0	74.0	76	3	3	Cu	15 0		5 0	5 0	5		86	080505
15	29.860	80.0	74.0	76	4	4	Cu	15 0		4 0	4 0	4		86	080505
16	29.870	80.0	75.0	79	3	3	Cu	15 0		3 0	3 0	3		86	080505
17	29.870	80.0	76.0	83	4	4	Cu	15 0		4 0	4 0	4		86	080505
18	29.890	81.7	75.0	75	7	3	Cu	15 3	As 100	6 1	7 0	6		86	111203
19	29.905	78.5	75.5	87	7	6	Cu	15 1	As 100	7 0	7 0	7		86	111203
20	29.905	78.5	75.5	87	8	7	Cu	15 1	As 100	8 0	8 0	8		86	111203
21	29.900	79.8	74.5	78	7	6	Cu	15 1	As 100	7 0	7 0	7		86	111203
22	29.870	81.5	75.6	75	6	1	Cu	15 5	As 100	6 0	6 0	6		86	081005
23	29.870	81.5	76.0	77	6	1	Cu	15 5	As 100	6 0	6 0	6		86	081005

Zulu 11

TIME (GCT)	Position	Course	Speed	Visibility Nautical	Sea Level Press (MB)	TEMP °F	DEW Point (°F)	Wind Direct	Wind Speed
1400 X 0000	11672	225	9	10	109	82	73	←	12
1500 ↓ 0100	11672	225	9	10	108	83	72	←↙	16
1600 0200	11672	225	9	10	107	82	73	←	13
1700 0300	11672	225	9	10	101	82	73	←	13
1800 0400	11672	225	9	10	100	82	72	←	13
1900 0500	11672	225	9	10	102	82	72	←	13
2000 0600	11672	225	9	10	102	82	72	←	13
2100 0700	11575 ↑	225	9	10	110	81	72	←	13
2200 0800	11573	225	9	10	112	81	73	←	12
2300 0900	11573	225	9	10	117	81	73	←	13
2400 1000	11573	225	9	10	106	80	77	←	13
0100 XI 1100	11573	225	9	10	111	78	72	←	12
0200 ↓ 1200	11673	225	9	10	106	81	73	←	11
0300 1300	11573	225	9	10	111	78	72	←	11
0400 1400	11574	315	8	10	108	80	73	←	11
0500 1500	11574	315	8	10	108	80	73	←	11
0600 1600	11574	315	8	10	108	80	73	←	12
0700 1700	11574	315	8	10	102	81	72	←↙	11
0800 1800	11574	315	8	10	107	82	72	←↙	11
0900 1900	11574	315	8	10	114	84	72	←↙	10
1000 2000	11574	050	8	10	117	83	71	←	12
1100 2100	11574	050	8	8	119	82	72	←	16
1200 2200	11574	050	8	10	115	83	73	←	13
1300 2300	11574	050	8	10	112	84	72	←	14

Zulu 11

TIME (GCT)	Station Pressure (inches)	Dry Bulb	Wet Bulb	RH	Total sky cover	Total opaque sky cover	SEA Water (°F)	Waves
0000	29.855	81.8	75.5	75	8	8	86	081005
0100	29.850	82.7	74.9	70	6	6	86	081005
0200	29.835	81.9	75.3	74	3	3	86	081005
0300	29.830	81.9	75.3	76	3	3	86	081005
0400	29.825	82.0	75.1	72	4	4	86	091205
0500	29.835	82.0	75.1	72	4	4	86	091205
0600	29.835	82.0	75.1	72	5	5	86	091205
0700	29.855	81.2	74.8	74	2	2	86	091205
0800	29.860	81.1	75.0	75	3	3	86	091205
0900	29.875	81.0	75.0	79	3	3	86	091205
1000	29.840	80.0	78.0	91	3	3	86	091205
1100	29.860	78.0	74.0	83	3	3	86	091705
1200	29.840	80.7	74.9	76	1	1	86	091705
1300	29.860	78.4	74.0	81	7	7	86	091205
1400	29.850	80.0	75.0	79	7	7	86	091205
1500	29.850	80.0	75.0	79	5	5	86	091205
1600	29.850	80.0	75.0	79	5	5	86	091205
1700	29.840	81.3	74.9	74	8	3	87	091005
1800	29.850	81.5	74.8	73	10	3	87	091005
1900	29.870	83.8	75.5	68	10	3	87	091005
2000	29.875	83.3	74.8	67	10	3	87	090805
2100	29.885	81.9	74.8	72	10	8	87	090805
2200	29.870	83.2	76.0	72	10	5	87	100806
2300	29.860	83.5	75.0	67	10	6	87	100906

Zula 12

TIME (GCT)	Position	Course	Speed	Visibility Naut Miles	Sea level Pressure (MBS)	Temp	Dew Pt.	Wind Direct	Wind Speed
1400 XII 0000	11574	050	8	10	110	83	73	←	14
1500 0100	11674	050	8	10	104	84	73	←	14
1600 0200	11674	050	8	10	102	83	73	←	15
1700 0300	11673	050	8	10	102	83	72	←	18
1800 0400	11673	050	8	10	102	82	73	←	18
1900 0500	11673	050	6	10	107	82	70	←	18
2000 0600	11673	050	8	10	109	81	71	←	18
2100 0700	11673	050	8	10	117	81	72	←	17
2200 0800	11673	050	8	10	120	80	74	↙	14
2300 0900	11673	050	8	10	122	81	72	←	15
2400 1000	11772	050	8	10	122	80	73	←	14
0100 XII 1100	11772	050	8	10	123	80	73	←	13
0200 1200	11772	050	8	10	123	79	74	←	13
0300 1300	11772	090	10	10	108	78	69	←	12
0400 1400	11772	090	10	10	104	80	73	←	13
0500 1500	11772	090	10	10	104	80	73	←	13
0600 1600	11772	090	10	10	104	80	73	←	13
0700 1700	11772	090	10	10	104	80	73	←	13
0800 1800	11772	090	10	10	124	80	67	←↖	10
0900 1900	11772	090	10	10	127	82	72	←	10
1000 2000	11771	090	9	10	130	83	73	←↙	14
1100 2100	11771	090	9	10	129	82	73	↙	16
1200 2200	11771	090	9	10	128	83	74	↙	15
1300 2300	11771	090	9	10	123	84	69	↙	15

Zula 12

TIME (GCT)	Station Pressure inches	Dry Bulb	wet Bulb	R.H	Total sky Cover	Total opaque sky cover	Sea water Temp	Waves
0000	29.855	83.3	76.0	71	10	5	87	110806
0100	29.840	83.8	76.0	70	10	4	87	110806
0200	29.835	83.0	75.7	72	10	11	87	110806
0300	29.835	82.5	75.0	71	10	3	87	110806
0400	29.835	82.0	75.5	69	10	5	87	110806
0500	29.850	81.9	73.8	68	10	1	87	110806
0600	29.855	81.1	74.2	72	10	2	87	100806
0700	29.870	81.4	75.0	74	10	2	86	100806
0800	29.885	80.0	75.8	83	10	2	86	100806
0900	29.890	80.8	74.8	76	10	4	86	100806
1000	29.890	80.0	75.0	79	10	4	86	100806
1100	29.895	80.0	75.0	79	10	4	86	100806
1200	29.895	78.8	75.0	84	10	4	86	100806
1300	29.850	78.0	72.0	75	6	6	86	070806
1400	29.840	80.0	75.0	79	7	7	86	080805
1500	29.840	80.0	75.0	79	7	7	86	080805
1600	29.840	80.0	75.0	79	8	8	86	080805
1700	29.840	80.0	75.0	79	8	8	86	080705
1800	29.900	80.2	71.2	64	10	10	86	080705
1900	29.905	82.1	75.1	72	10	4	86	080805
2000	29.915	82.5	75.8	73	10	2	86	070805
2100	29.910	82.3	75.4	73	10	4	86	080805
2200	29.910	82.7	76.3	75	10	3	86	080805
2300	29.895	83.8	73.2	60	10	6	86	080805

Zulu 13

TIME (GCT)	Position	Course	Speed	Visibility nm	Sea Level Press	TEMP	Dew Point	Wind Direction	Wind speed
1400 XII	11772	090	9	10	119	82	75	←↙	11
1500 0100	11771	090	9	10	111	82	74	↙	13
1600 0200	11771	090	9	10	115	82	74	↙	18
1700 0300	11771	090	9	10	111	82	74	↙	13
1800 0400	11770	090	9	10	110	82	75	↓	7
1900 0500	11770	090	9	10	108	81	76	←↙	4
2000 0600	11770	090	9	10	117	81	75	←↙	10
2100 0700	11770	082	9	10	130	80	75	←↙	11
2200 0800	11770	082	9	10	130	80	75	←↙	12
2300 0900	11770	082	9	10	132	81	76	←↙	11
2400 1000	11770	082	9	10	135	78	74	←	6
XIII 0100 1100	11769	082	9	10	135	78	74	←	6
0200 1200	11769	082	9	10	130	81	75	←	11
0300 1300	11769	082	9	10	138	80	74	←	7
0400 1400	11769	082	9	10	135	80	74	←↙	12
0500 1500	11769	082	9	10	135	80	74	←	12
0600 1600	11769	082	9	10	135	80	74	←	12
0700 1700	11769	082	9	10	135	80	74	←	12
0800 1800	11768	082	9	10	142	81	74	←	15
0900 1900	11768	082	9	10	148	82	75	←	16
1000 2000	11768	082	9	10	148	81	75	←	16
1100 2100	11768	082	9	10	152	82	73	←	15
1200 2200	11768	082	9	10	152	82	75	←	14
1300 2300	11768	082	9	10	147	83	75	←↙	17

Zulu 12

Time (GCT)	Station Pressure	Dry Bulb	Wet Bulb	RH	Total sky cover	Total Opaque sky cover	Sea water	Waves
0000	29.885	82.0	77.3	80	10	8	87	080805
0100	29.860	81.5	76.2	79	10	2	87	080805
0200	29.870	81.5	76.2	79	10	2	87	080805
0300	29.860	81.5	76.2	79	10	2	87	080805
0400	29.855	81.6	76.5	79	10	6	87	080805
0500	29.850	80.7	77.0	85	10	7	87	080805
0600	29.875	81.2	76.7	82	10	2	87	080805
0700	29.915	80.3	76.5	84	10	2	86	080805
0800	29.915	80.3	76.5	84	10	7	86	080805
0900	29.920	80.8	77.1	86	10	7	86	080805
1000	29.930	78.0	75.0	87	10	7	86	080805
1100	29.930	78.0	75.0	87	10	7	86	080805
1200	29.915	80.8	76.8	84	4	4	86	080805
1300	29.940	80.0	76.0	83	10	2	86	090805
1400	29.930	80.0	76.0	83	10	6	86	090806
1500	29.930	80.0	76.0	83	10	6	86	090806
1600	29.930	80.0	76.0	83	10	6	86	090806
1700	29.930	80.0	76.0	83	10	6	86	090806
1800	29.950	80.8	75.9	80	10	6	86	090806
1900	29.970	81.7	75.7	79	10	6	86	090806
2000	29.970	81.2	76.7	82	10	6	87	090806
2100	29.980	82.1	75.6	74	10	6	87	090806
2200	29.980	81.8	76.5	79	10	4	85	080605
2300	29.965	82.9	76.0	76	10	3	85	1100806

Zulu 14

TIME (GCT)	Station Pressure	Dry Bulb	Wet Bulb	R.H	Total Sky Cover	Total, opaque sky cover	Sea Water TEMP	Wave
1400 XIII 0000	29.950	81.1	76.0	79	10	2	85	110606
1500 0100	29.945	81.3	75.8	78	10	1	85	110606
1600 0200	29.935	81.5	76.0	78	10	2	85	110706
1700 0300	29.925	81.5	76.0	78	10	1	85	120806
1800 0400	29.925	80.9	75.8	79	10	1	85	120806
1900 0500	29.925	80.9	75.7	79	10	1	85	110806
2000 0600	29.965	80.3	75.5	80	10	2	85	110606
2100 0700	29.965	80.8	76.0	80	10	2	85	110606
2200 0800	29.970	79.9	75.8	83	10	2	85	110606
2300 0900	29.980	79.8	76.0	84	10	2	85	110606
2400 1000	29.960	79.0	75.0	83	10	3	85	100606
0100 XIV 1100	29.940	79.0	74.0	79	10	2	85	100605
0200 1200	29.955	79.5	75.1	81	10	2	85	110606
0300 1300	29.920	80.0	74.0	75	10	2	85	100606
0400 1400	29.930	79.0	74.0	79	10	2	85	080605
0500 1500	29.930	79.0	75.0	83	10	8	85	08060K
0600 1600	29.930	79.0	75.0	83	10	8	85	08060K
0700 1700	29.930	79.0	75.0	83	10	8	85	08060K
0800 1800	29.950	80.0	76.0	83	10	8	85	09060K
0900 1900	29.970	78.9	75.8	87	9	9	85	09060K
1000 2000	29.975	80.5	76.2	81	9	9	85	09060K
1100 2100	29.975	78.2	74.8	85	10	10	85	090803
1200 2200	29.955	79.4	75.1	82	9	9	85	111002
1300 2300	29.955	80.2	75.0	78	6	5	85	110803

Zulu 14

TIME (GCT)	Position	Course	Speed	visibility	Sea level Pressure (MBS)	TEMP	Dew point	WIND Direction	WIND Speed
0000	11767	082	9	10	144	81	74	←↙	17
0100	"				140	81	74	←	15
0200	"				137	82	74	←	14
0300	"				134	82	73	←	14
0400	"				134	81	74	←	15
0500	"				134	81	74	←↙	16
0600	"				146	80	74	←↙	14
0700	"				147	81	74	←↙	16
0800	"				149	80	74	←	17
0900	"				152	80	75	←↙	20
1000	"				146	79	73	←↙	15
1100	"				138	79	72	←	15
1200	"				140	80	73	←↙	16
1300	"				132	80	72	←	15
1400	11767				135	79	72	←	15
1500	11766				135	79	73	←	15
1600	11766				135	79	73	←	15
1700	11766				135	79	73	←	15
1800	11865	083			142	80	74	←↙	13
1900	11865	"		↓	149	79	75	←	10
2000	11864			10	150	81	74	←	9
2100	11864			6	150	78	73	←	11
2200	11864			10	143	79	73	←	7
2300	11864	↓	↓	10	144	80	73	←↙	8

Wind Speed (kt)

Date	1900-0500		0600-1800		TOTAL (kt)	
A1	10 (1)	10.0			10 (1)	10.0
A2	21 (2)	10.5	23 (2)	11.5	44 (4)	11.0
A3	21 (2)	10.5	22 (2)	11.0	43 (4)	10.8
A4	22 (2)	11.0	21 (2)	10.5	43 (4)	10.8
A5	26 (2)	13.0	36 (2)	18.0?	62 (4)	15.5
A6	15 (2)	7.5	23 (2)	11.5	38 (4)	9.5
A7	102 (7)	14.6	182 (11)	16.5	284 (18)	15.8
A8	149 (11)	13.5	179 (13)	13.8	328 (24)	13.7
A9	193 (11)	16.6	224 (13)	17.2	407 (24)	17.0
A10	167 (11)	15.2	197 (13)	15.2	364 (24)	15.2
A11	152 (11)	13.8	178 (13)	13.7	330 (24)	13.8
A12	118 (11)	10.7	168 (13)	12.9	286 (24)	11.9
A13	146 (11)	13.3	192 (13)	14.8	338 (24)	14.1
A14	133 (11)	12.1	120 (13)	9.2	253 (24)	10.5
A15	57 (5)	11.4	79 (8)	9.9	136 (13)	10.5

0600-1800

WS	# I	AVG	WS O	=	AVG
1619	67	15.7	661	55	12.0

Time Zone - (N)

Date	1900-0500		0600-1800		TOTAL	N
A1	71	(1) 71.0	—		71	(1) 71.0
A2	166	(2) 83.0	147	(2) 73.5	313	(4) 78.3
A3	161	(2) 80.5	149	(2) 74.5	310	(4) 77.5
A4	152	(2) 76.0	143	(2) 71.5	295	(4) 73.8
A5	156	(2) 78.0	156	(2) 78.0	312	(4) 78.0
A6	166	(2) 83.0	150	(2) 75.0	316	(4) 79.0
A7	578	(7) 82.6	792	(10) 79.2	1370	(17) 80.6
A8	908	(11) 82.5	1073	(13) 82.5	1981	(24) 82.5
A9	851	(11) 77.4	918	(13) 70.6	1769	(24) 73.7
A10	828	(11) 75.3	1006	(13) 77.4	1834	(24) 76.4
A11	850	(11) 77.3	925	(13) 71.2	1775	(24) 74.0
A12	902	(11) 82.0	971	(13) 74.7	1873	(24) 78.0
A13	909	(11) 82.6	1028	(13) 79.1	1937	(24) 80.7
A14	887	(11) 80.6	1051	(13) 80.8	1938	(24) 80.8
A15	383	(5) 76.6	578	(8) 72.3	961	(13) 73.9

#5

Bashman !

0100	16°40'	169°24'	0130 ↓	
0200	16°34'	169°27'		
0300	16°25'	169°24'		
0000	16°16'	169°22'		
0500	16°07'	169°11'		
0623	15°55'	169°22'		Star
0800	15°40'	169°17'		
0900	15°30'	169°16'		
1000	15°19'	169°14'	163°	
1100	15°10'	169°12'		
1200	15°00'	169°10'		LORAN
1300	14°52'	169°07'		
1400	14°43'	169°05'		
1500	14°33'	169°03'		
1600	14°25'	169°01'		
1700	14°16'	168°59'	↓	
1800	14°08'	169°08'		
1908	14°04'	169°14'	225°	LORAN
2011	13°58'	169°20'		STAR
2100	13°50'	169°27'		
2200	13°43'	169°34'		
2300	13°36'	169°40'		
2400	13°30'	169°43'	↓	

#6

0100	13°23'	169°54'
0200	13°20'	170°05'
0300	13°15'	170°12'
0400	13°10'	170°19'
0500	13°04'	170°27'
0630	12°52'	170°42'
0800	12°40'	170°52'
0900	12°32'	170°59'
1000	12°24'	171°07'
1100	12°16'	171°13'
1200	12°10'	171°22'
1300	12°17'	171°29'
1400	12°24'	171°36'
1500	12°31'	171°43'
1600	12°38'	171°51'
1700	12°47'	171°45'
1800	12°54'	171°38'
2000	12°59'	171°28'
2200	13°11'	171°15'
2300	13°19'	171°07'
2400	13°24'	171°01'

#7

0100	13°32'	170°53'
0200	13°38'	170°47'
0300	13°44'	170°41'
0400	13°51'	170°34'
0500	14°05'	170°32'
0630	14°10'	170°28'
0800	14°18'	170°18'
0900	14°25'	170°13'
0955	14°32'	170°07'
1120	14°42'	170°00'
1200	14°45'	169°55'
1300	14°52'	169°47'
1400	14°59'	169°39'
1500	15°06'	169°32'
1535	15°09'	169°30'
1640	15°12'	169°36'
1800	15°20'	169°46'
1840	15°24'	169°46'
2000	15°39'	169°56'
2016	15°41'	169°58'
2100	15°37'	170°06'
2200	15°30'	170°14'
2300	15°23'	170°22'
2400	15°16'	170°30'

Thursday 4/8

0100	15°09'	170°36'	
0200	15°02'	170°44'	
0300	14°54'	170°54'	
0400	14°47'	170°59'	
0500	14°42'	171°04'	
0635	14°37'	171°11'	fix
0700	14°32'	171°15'	
0800	14°27'	171°23'	
0900	14°19'	171°31'	
1000	14°13'	171°39'	
1100	14°07'	171°47'	
1200	13°59'	171°55'	
1300	13°53'	172°04'	LORAN FIX
1400	13°48'	172°08'	
1500	13°42'	172°13'	
1600	13°35'	172°17'	
1700	13°30'	172°22'	
1800	13°23'	172°26'	
1900	13°17'	172°30'	
2015	13°11'	172°34'	fix 7 M. SW PT Quartz TURNED NW
2100	13°17'	172°39'	
2200	13°24'	172°45'	
2300	13°31'	172°50'	
2400	13°39'	172°56'	

FRIDAY 19

0100	13°47'	173°02'	
0145	13°52'	173°06'	PT. Andesite
0200	13°53'	173°04'	
0300	14°01'	172°59'	
0400	14°09'	172°54'	
0500	14°16'	172°48'	
0611	14°27'	172°40'	fix = star
0700	14°34'	172°32'	
0900	14°40'	172°26'	
1000	14°46'	172°21'	
1100	14°52'	172°15'	
1230	15°00'	172°07'	LORAN FIX
1300	15°02'	172°05'	
1400	15°06'	172°00'	
1500	15°10'	171°55'	
1600	15°15'	171°51'	
1700	15°19'	171°47'	
1800	15°23'	171°42'	
1900	15°28'	171°38'	
2030	15°34'	171°31'	fix star
2200	15°43'	171°22'	
2300	15°50'	171°16'	
2400	15°56'	171°09'	

SATURDAY #10

0100	16°02'	171°03'	
0200	16°09'	170°56'	
0300	16°15'	170°49'	
0400	16°20'	170°44'	Turned 10 mi. N.W. of Pt. GABBRO
0500	16°27'	170°51'	
0631	16°40'	171°02' fix star	
0700	16°44'	171°06'	Turned SW 10 mi. ESE of Pt. PYROXENE
0800	16°37'	171°13'	
0900	16°31'	171°20'	
1000	16°25'	171°27'	
1100	16°19'	171°34'	
1200	16°13'	171°42'	
1300	16°07'	171°49'	
1400	16°01'	171°55'	
1500	15°54'	172°03'	
1600	15°49'	172°09'	LORAN FIX
1700	15°43'	172°14'	
1800	15°38'	172°22'	
1900	15°31'	172°29'	
2000	15°25'	172°36'	
2042	15°21'	172°40'	fix - (STAR)
2200	15°10'	172°52'	
2300	15°03'	173°00'	
2400	14°55'	173°07'	

SUNDAY 11

0100	14°47'	173°14'	
0200	14°41'	173°22'	
0300	14°34'	173°30'	
0400	14°26'	173°38'	Turned 4 mi. SW of Pt. Pumice
0500	14°32'	173°46'	
0642	14°45'	173°56'	fix star
0800	14°54'	174°04'	
0900	15°01'	174°11'	
0936	15°06	174°15'	TURNED 3 MI. WSW OF Pt BENTONITE
1100	15°15'	174°06'	
1200	15°21'	173°59'	
1340	15°31'	173°49'	LORAN Fix
1400	15°34'	173°46'	
1500	15°40'	173°38'	
1600	15°48'	173°32'	
1700	15°53'	173°25'	
1800	16°00'	173°19'	
1900	16°05'	173°14'	
2025	16°11'	173°06'	Fix star
2100	16°15'	173°04'	
2200	16°21'	172°57'	
2300	16°27'	172°50'	
2400	16°33'	172°44'	

Wardair # 12

0100	16°39'	172°38'	
0200	16°45'	172°32'	
0240	16°49'	172°28'	Pt. FELOSPAR
0300	16°50'	172°24'	
0400	16°50'	172°15'	
0500	16°50'	172°06'	
0600	16°50'	171°57'	
0700	16°51'	171°48'	
0800	16°56'	171°39' 39	
0900	16°57'	171°29' 29 mi	
1000	16°57'	171°19' 19	
1130	16°50'	171°04' 09	LORAN FIX
1200	16°50'	170°58'	
1300	16°50'	170°48'	
1400	16°50'	170°39'	
1500	16°50'	170°30'	
1600	16°50'	170°20'	
1735	16°50'	170°26'	LORAN
1901	16°50'	170°15'	
2020	16°53'	170°01	FIX STAR
2200	16°54'	169°45'	
2300	16°54'	169°36'	
2400	16°55'	169°29'	

TUESDAY #12

0100	16°56'	169°24'	
0200	16°57'	169°07'	
0300	16°58'	168°58'	
0400	16°59'	168°48'	
0500	17°00'	168°39'	
0628	17°06'	168°36'	fix star
0800	17°07'	168°23'	
0900	17°08'	168°13'	
1000	17°10'	168°04'	✓
1100	17°11'	167°55'	
1200	17°14'	167°46'	LORAN FIX ✓
1300	17°14'	167°36'	✓
1400	17°15'	167°27'	✓
1500	17°17'	167°17'	✓
1640	17°22'	167°04'	LORAN ✓
1800	17°22'	166°53'	✓
1900	17°23'	166°43'	✓
2000	17°23'	166°35'	star fix ✓
2100	17°25'	166°26'	✓
2200	17°26'	166°17'	
2300	17°27'	166°09'	
2400	17°28'	166°00'	

WEDNESDAY 4/14

0100	17°29'	165°51'	
0200	17°30'	165°42'	
0300	17°32'	165°34'	
0400	17°33'	165°25'	✓
0500	17°34'	165°16'	✓
0605	17°41'	165°08'	stars ✓
0700	17°42'	164°54'	✓
0800	17°43'	164°45'	✓
0900	17°44'	164°36'	✓
1000	17°45'	160°27'	✓
1100	17°45'	164°18'	
1225	17°48'	160°06'	LORAN ✓
1300	17°48'	163°59'	
1400	17°49'	163°49'	
1500	17°50'	163·40'	✓
1600	17°52'	163°30'	
1700	17°53'	163°21'	✓
1800	17°54'	163°11'	✓
1945	17°55'	163°04'	FIX STAR
2100	17°56'	162°53'	
2200	17°57'	162°44'	
2300	17°58'	162°35'	
2400	17°58'	162°26'	

Thursday #15

0100	18°00'	162°17'	
0200	18°01'	162°09'	
0300	18°02'	162°00' ✓	
0400	18°03'	161°51'	
0500	18°04'	161°43'	
0555	18°11'	161°37'	STDR fix ✓
0700	18°11'	161°28' ✓	
0800	18°12'	161°19'	
0900	18°13'	161°10' ✓	
1000	18°15'	161°00'	LORAN
1100	18°15'	160°51'	
1200	18°16'	160°43'	
1300	18°17'	160°34'	
1400	18°16'	160°26' ✓	
1445	18°25'	160°22'	LORAN ✓
1600	18°38'	160°17'	LORAN ✓
1700	18°45'	160°13'	
1800	18°58'	160°09'	
1900	19°08'	160°04'	
1935	19°13'	160°04'	FIX STAR
2000	19°17'	160°01'	
2100	19°25'	159°51'	
2200	19°33'	159°54'	
2300	19°42'	159°50'	
2400	19°50'	159°46'	

	Sunrise
August 2	0617
3	0627
4	0658
5	0700
6	0708
7	0630
8	0635
9	0611
10	0631
11	0642
12	0631
13	0628
14	0605
15	0555

Impedance (Ω)

Date	1900 - 0500	0500 - 1900	Total (Ω)
A1	— 81.3 (1) · 80.3	[redacted]	80.3 (1)
A2	156.7 (2) · 78.3	160.7 (2) - 80.4	317.2 (4) · 79.3
A3	155.1 (2) · 78.0	160.0 (2) · 80.0	315.9 (4) · 79.0
A4	159.4 (2) · 79.7	163.2 (2) · 81.4	322.6 (4) · 80.6
A5	161.5 (2) · 80.7	163.1 (2) · 81.7	324.6 (4) 81.2
A6	161.9 (2) · 81.0	164.2 · (2) 82.1	326.1 (4) · 81.5
A7	562.2 (7) · 81.0	536.2 (10) 82.6	1393.4 (17) 82.0
A8	596.6 (11) · 81.5	1063.9 (13) · 82.2	1965.5 (24) 81.9
A9	595.7 (11) · 80.5	1062.7 (13) · 81.7	1948.6 (24) 81.2
A10	578.1 (11) · 80.7	1051.9 (13) · 80.9	1940.0 (24) 80.8
A11	552.3 (11) · 80.2	1073.1 (13) · 82.5	1954.4 (24) 81.4
A12	578.1 (11) · 79.8	1061.2 (13) · 81.7	1955.2 (24) 80.8
A13	575.5 (11) · 80.0	1056.5 (13) · 81.3	1936.3 (24) · 80.7
A14	566.2 (11) · 79.0	1055.0 (13) · 79.6	1902.6 (24) 79.3
A15	366.5 (5) 376.5 (5) 79.4	611.2 (8) · 80.2	1854.4 (13) 79.9
A16			
A17			

DATE: Aug 5 1650 - 2011 Total Minutes: _____ Total Miles: _____

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
8	10		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
8	2	4	0	10	2	5	0								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
0	0	0	0	0	0						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0	0	0	0	0	0	0	0								

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0	0	0	0	0	0

DATE: Aug 6 Total Minutes: _____ Total Miles: _____

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
46	120		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
39	9	10		172	13	16	1								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
1	0	0	1	0	0						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
7	42		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
3	70		1	7	

DATE: Aug. 7 Total Minutes: _____ Total Miles: _____

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
23	32		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
14	3	4	0	16	3	4	0								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
3	2	0	3	2	0						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
2	9		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0	0	0	0	0	0	0	0								

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
1	5		0	0	

DATE: August 86 Total Minutes: _____ Total Miles: _____

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
45	139		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
31	6	18	0	428	24	0									

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
93	2	95	2								

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
4	7		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1		

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0	0	0	0	0	0	0	0								

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
1	80		0	0	

DATE: Aug 7 Total Minutes: _____ Total Miles: _____

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
17	962	458	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
~~65~~	~~25~~	~~17~~	0	~~291~~	~~116~~	50	0	13	24	0	232	20	41	0	

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
43	0		430								

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
8	134		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1		

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0	0	0	0	0	0	0	0								

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
2	2		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
~~7~~ 3	~~367~~ 364		~~2~~ 1	~~241~~ 241	

DATE: Aug 10 Total Minutes: _____ Total Miles: _____

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
67	317		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
42	32	6	1	71	52	7	1								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
7	1	0	7	1	0						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
22	237		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0											

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
/	/		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

August 11

DATE: ~~Bird Study Area~~ Total Minutes: _____ Total Miles: _____

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
50	232		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
36	15	4	1	66	29	7	1								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
5	1	0	5	1	0						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
/	/		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: August 12 Total Minutes: _____ Total Miles: _____

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
7	7		

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
5			4	5			4								

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
2	2		

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

(all sp. and unid. groups)

DATE: Aug. 1 Total Minutes: 310 Total Miles: 48

I. Total Abundance of birds:

0-100

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
45	49	1.08	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
35	20	2		36	20	2		1.02	1.0						

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
3	1	2	3	1	2	1.0					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	5	1.67	0

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
1	1	0		1	1	0	0	1.0	1.0	—	—			—	—

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	—	—

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
0	0	0	0	0	—

DATE: aug. 2 Total Minutes: 802 Total Miles: 107

I. Total Abundance of birds:

100-300

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
179	996	5.65	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
104	74	7	/	295	~~46~~ 9		/	2.83			/				

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
14	11	3	16	13	3	1.08					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
57	~~655~~ 642	11.49	~~5.97~~ 6.12

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
2	0	0	2	2	0	0	2	1.0	-	-	-				

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	—	—

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
14	~~304~~ 511	.29			

DATE: aug. 3 Total Minutes: 805 Total Miles: 138

300 - 500

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
44	151	3.20	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
30 ~~34~~ 21		~~2~~		43 ~~42~~ 29		2		1.43							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
8	3	4	10	5	4	1.25					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
5	97	19.40	0.70

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				—				—			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	—	—

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: aug. 4 Total Minutes: 840 Total Miles: 130

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
64	285	4.48	

500-3.

500-700

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
37	24	9		51	34	11		1.37							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
5	4	1	5	6	1	1.0					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
19	227	11.95	1.75

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
		0				0									

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1.0	

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: aug. 5 Total Minutes: 851 Total Miles: 130

5 - 20:

7 - 10

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
37	56	1.51	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
25	14	11		30	15	12		1.2							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
5	3	1	5	3	1	1.0					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
6	20	3.33	

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0											

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 6 Total Minutes: 810 Total Miles: 131

2-5

7-10

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
45	121	2.68	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
39	9	11		77	12	11		1.97							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
1	—	—	1	—	—	1.0					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
7	42	6.00	0.32

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0											

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	—	—

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 7 Total Minutes: 826 Total Miles: 108

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
25	34	1.36	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
30	3	6		43	3	6		1.43							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
3	2	1	3	2	1	1.0					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	10	3.33	

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0											

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1.0	

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: (day) Total Minutes: 253 Total Miles: 44

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
27	38	1.41	.86

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
21	5	15	0	55	6	21	0	1.57	1.20	1.40	-	.75	.14	.48	-

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
4	2	1	4	2	1	1.0	1.0	1.0	.09	.05	—

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1.0	.05

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
		0				0				—				—	

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	—	—

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 8 Total Minutes: 565 Total Miles: 14

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
18	101	5.61	1.36

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
11	1	5	0	12	2	5	0	1.09	2.0	1.0	-	.16	.03	.07	—

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
4	3	0	4	3	0	1.0	1.0	—	.054	.041	—

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	6	2.0	.76

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1	.

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				—				—			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	—	—

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 9 Total Minutes: 199 Total Miles: 27

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
26 (27)	128	4.92	1.86

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
20	1	13 (19)	0	35	3	19 (23)	0	1.75	3.00	1.46 (20)	—	.51	.04	.28 (.37)	—

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
3	3	0	3	3	0	1.0	1.0	—	.04	.04	—

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3 (2)	6 (5)	2.0	.09

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
1				1				1.0				.04			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	—	—

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.
3	89		1	25	

DATE: 2 - 1 Total Minutes: 4 Total Miles: 6.9

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
36	330	9.17	4.78

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
30	12	11	0	197	22	0		6.57	1.42	2.00	—	2.86	.24	.32	—

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
1	0	0	1	0	0	.10	—	—	.014	—	—

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
5	128	25.60	19.28

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				—				—			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
2	2	1.0	

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 10 Total Minutes: 333 Total Miles: 126

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
~~67~~	~~318~~ 317	4.54	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
4/2 ~~33~~		6	1/71	~~[illegible]~~		7	1.09								

~~[illegible]~~ ~~[illegible]~~ 1 52

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
7	)	—/8	1	—	/1.14						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
22	237	10.77	1.88

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
	0				0										

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1.0	

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

Split Gap

8

9

DATE: Aug 11 Total Minutes: 523 Total Miles: 102

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
~~53~~ 50	~~233~~ 232	4.39	2-3

II. Abundance of the Shearwater-Petrel-Albatross Group: 7-10

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
~~31~~ 35	~~18~~ 4	6	1/66	~~27~~ 29	7	1/2.12									

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
5	1	-/5	1	-	/1.0						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
~~16~~ 19	149	9.31	1.22

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				-				-			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1.0	

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug 12 Total Minutes: 829 Total Miles: 112

I. Total Abundance of birds:

J-200

1-10

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
77	303	3.80	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
34	29	0		47	38	0		1.36							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
2	—	—	2	—	—	1.0					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
~~2~~ 39	~~7~~ 252	1.01	0.05

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0											

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0		

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 13 Total Minutes: 742 Total Miles: 118

500 - J.

57

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
17	21	1.23	

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
11	10	0		12	11	0		1.1							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
1	1	—	1	1	—	1.0					

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
5	8	1.60	.07

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0				—				—			

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	—	—

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 14 Total Minutes: 820 Total Miles: 115

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
35	270	7.71	

300-500

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
21	20	1		78	~~74~~ 74	1		3.71							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
7	6	-	9	9	-	1.28					

IV. Abundance of Terms:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
~~6~~ 7	~~149~~ 179	24.83	1.30

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
0				0											

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
1	1	1.0	

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: aug. 15 Total Minutes: 820 Total Miles: 129

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
71	312	4.39	

100-300

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B
49	33	6		195	135	7		3.99							

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT
13	6	5	18	8	8	1.38					
		6			10						

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
8	119	14.88	0.92

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
0	0	0	0

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B
2	0	0	2	2	0	0	2	1.0	-	-	1.0	-	-		

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile
3	4	1.33	

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Sept. 3 Total Minutes: 803 Total Miles: 167

1-3

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug 15 Total Minutes: 820 Total Miles: 129

1-3

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: July 3 Total Minutes: 325 Total Miles: 138

3 - 5

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 14 Total Minutes: 820 Total Miles: 115

3.5

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 4 Total Minutes: 240 Total Miles: 130

5-7

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 13 Total Minutes: 742 Total Miles: 118

5-7

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 5 Total Minutes: 151 Total Miles: 1.30

7-16

1. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Jun 7 Total Minutes: 826 Total Miles: 138

7-16

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug 8 Total Minutes: 255 Total Miles: 44

Sunrise – 1053

7-10

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 9 Total Minutes: 623 Total Miles: 69

1000 ÷ Sunset

7-10

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 16 Total Minutes: 833 Total Miles: 126

7-16

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 13 Total Minutes: 829 Total Miles: 11.2

7-10

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 6 Total Minutes: 816 Total Miles: 131

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 8 Total Minutes: 565 Total Miles: 74

1050 — Sunset

7-10

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 9 Total Minutes: 199 Total Miles: 27

Sunrise -- 1000

9-10

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: Aug. 11 Total Minutes: 823 Total Miles: 122

7-12

I. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.

DATE: 1 Aug. 1963 WEATHER:

Coned off stern sunset 1913

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1418	Brown Booby	Dove into H_2O awkwardly + fed on surface ca 2 min. flew off in direction ship was headed (right side of ship	
1418	large, white, narrow Pointed wings dusky blackish towards tips white-Tailed tropic bird? (80%)	flying in opposite direction of ship (right side)	
1427	wedge-tailed shearwater	circled about front of ship - moved with ship rapid flight then glide close to H_2O, a lot of looking into wave troughs (right side	
1442 ↓ 1448	wedge-tailed shearwater	flying in direction of ship (right side) a lot more soaring + less flapping than before. going higher over water - flew horizontal over water (low) - then rose in air banked (always with belly toward boat then bed down into wave trough in "S" shaped motion → disappeared in front of boat	
1558	very Dissimilar, Petrel (70%) small all dark Petrel V tail - branish lines on top of wings	circling low over H_2O on left side of boat - mostly flapping, little glide, but shearwater like flight. very close to ship	
1558	wedge tailed shearwater	* same time as Above Dusky Petrel close to ship - no apparent association except both fly in same area not same pattern	
1613	? Shearwater white breasted	~~sighted~~ behind boat ca 1 mile or so. outlined on horizon	
1830	shearwater white breasted	ca 500 yds behind boat flying from port & Starboard	

DATE: 1 Aug. 1963 WEATHER: No rain in period, hot, humid, mostly sunshine but scattered clouds

Wirtz, Fleet, Treon, Marshall

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT Heading south	LAT. LOCALITY LONG.
1415	brown booby	at mouth of Pearl Harbor - port side of ship	
1425	brown booby	fishing off starboard bow - crossed to port in front of the bow	
1450	Wedge tailed Shearwater	- crossed from starboard to port.	
1538	Wedgetail	2 crossed bow headed east } all 3 were low over the water	
1538	Xmas (?)	crossed bow headed east }	
1545	petrel (?)	crossed bow headed east - small and chunky, solid dusky color - no white showing	
1547	wedgetail	off starboard bow	
1550	RT tropicbird	off bow heading south	
1551	Sooty tern	passed on port headed back toward Oahu	
1603	~~Petrel~~ (?) bird	crossed starboard to port - going east - small	
	~~Noddy~~ (?) Bulwers	erratic mixed glide and beating of wings -	
1609	~~Noddy~~ (?) Bulwers	crossed starboard to port - going east - same as preceding entry	
1622	wedgetail	starboard to port - going east	
1626	Bulwers (??)	dead ahead & port	
1628	wedgetail	dead ahead & port	
1634	Wedgetail	Starboard going cross bow to port	
1638	3 sooty terns	off port going aft just as ship turns	
1643	wedgetail	flying - to port	
1646	Wedgetail	Headed North off port	
1646	Wedgetail	" East across bow	
1650	Bulwers	Headed NW off ~~port~~ bow	
1710	Wedgetail	Headed across stern off aft	
1711	White-tail tropic	Sitting on water at bow flew south	
1713	Wedgetail	Headed southeast off port	
1722	~~Petrel~~ Petral	off port Heading south (change to West course	
1730	Wedgetail	Port to Starboard	

DATE: 1 Aug. 1963
PG. 2

WEATHER:

TIME	SPECIES	REMARKS, NUMBER, DEVIATION, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1734	Bulwer's	~~Starboard~~ Port about 300yds.	
1738	Bulwer's	Starboard to port - going south	
"	Wedgetail	port to starboard - going N. W.	
1743	Wedgetail	port & Starboard about 500 yds.	
1750	Wedgetail	port to starboard - going N. W	
16:00	Sooty tern	600 yds off port bow E. S. E	
1805	Bulwers	Starboard & Port about 75 yds.	
1805	Bulwers	Starboard moving away from ship.	
1812	Masked Booby (SA)	Port & Starboard & crossed path of Bulwers.	
1812	Bulwers		
1822	Bulwers	Flying NE off starboard bow	
		Starboard & Port (5)	
1845	BULWER'S	STARBOARD TO PORT ACROSS BOW ½.	
1848	WEDGETAIL	PORT - about 400 YDS. LIT on WATER FOR ABOUT 10 SEC.	
1900	DARK-RUMPED PETREL ?	~~STARBD~~ PORT SIDE { dark back & white underparts	
1902		STARBOARD TO PORT { dark back & white underparts	
1915	WEDGE TAIL ?	PORT TO STARBOARD	
1917	WEDGETAIL	circled ~~it~~ bow Port & Starboard at about 50 yards.	
1922	BONIN IS. PETREL	STARBOARD → PORT	
2200	tropic bird ?	sailor on Pantaid saw a large white bird hover over the stern	
2247	tern	several tern called heard from birds flying high over ship from bow to stern	

DATE: 8/2 Pg. 1

WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0550	Bulwers ?	Port mid ships from Stern seen only for few seconds	
0559	Wedgetail (2)	Port amidships circling at water level.	
0605	Wedgetail (2)	off Starboard bow, / crossed to Port bow.	
0606	Wedgetail (2)	off Port midships	
0609	Wedgetails (3)	Starboard midships	
0611	~~Wedgetails (4)~~ Bonin to Petrel	Port to Starboard across (reappeared off Port bow at 0613.	
0615	Wedgetail (2)	off Starboard bow -	
0618	Sooty Tern. (2)	from Port bow toward Stern (25 yds)	
0623	wedge tail	came from mid port & headed off.	
0626	wedge tail	same as above	
0627	Shearwater - Petrel	off front Starboard Indian direct. of Ships	
0630	Bonin ?	circling Starboard bow -	
0634	wedge tail	Port bow (200 yds.)	
0634	Greybacked Tern (80%) ?	Port bow (400 yds) leasurely flying in area.	
0642	white Booby ?	flying from Starboard to Port bow (600 yds)	
0647	Wedgetail	circling bow of ship (50 - 200 yds)	
0649	~~Dark rumped~~ Skua - Petrel	Starboard - Port (50 - 300 yds (underwing tips black)	
0649	Dark rumped Petrel	"	
0653	wedgetail	Port bow away from ship	
0705	2 wedgetails	Port bow toward aft	
0708	Sooty tern ?	20 ft. above water at wings grey-black above white below flapping constantly	
0707	Dark-rump ?	across bow, star. to port	

DATE: WEATHER:

Aug 2 pg. 2

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0712	sooty tern ?	2, port to starboard — N.W	
0714	wedgetail	1, port to starboard heading N.W.	
0716	sooty tern	2, on port side heading — W	
0718	Bulwer's ?	1 dead ahead heading to starboard.	
0723	Wedgtail	1, starboard side heading NW	
0724	wedgtail	1, port to starboard circling	
0726	~~Wedg~~tail	3, off port bow	
0726	tern	1, port 300 yds E.	
0726		1, port - came in turned headed S.	
0728	tern	1, off port 300 yds - headed W	
0728	Wedgetail	2, port - 300 yds	
0731	Wedgetail	1, port - 250-300-yds	
0732	Wedgetail	3, port - 150 yds - following each other	
0736	Bulwers	1, starboard to port heading S.E.	
0737	sooty tern	1, starboard heading E	
0745	Wedgetail	1, port - heading east 200 yds	
0745	Wedgetail	2, starboard - 30 yds crossed to port together	
0754	Wedgetail	1, dead ahead swung to the north	
0755	~~Wedge~~ Xmas Island ?	1, 200 yds off port side. headed SE.	
0800	Wedgetail	1, 300 yds of starboard heading S.W.	
0804	Shearwater ?	3, bright contrast light and dark. buzzy flight on water to port - 150 yds. flew south headed East.	
805	R.T. tropic bird		
0809	Wedgetail	3, headed S, 500 yds, together. off starboard.	
814	wedgetail	1 headed S 300 yds of starboard	

DATE: STATION:

Aug 2
Pg. 3

TIME	SPECIES	REMARKS, BEHAVIOR, DIR. OF FLIGHT	LAT. LONG. LOCALITY
0820	SOOTY TERN	HEADING E.	
0822	Petrel?	PORT!	
0824	LARGE FLOCK	OFF PORT ABOUT 300 YDS over 100 birds small fish jumping in water in front of flock.	
15+	WEDGETAIL'S		
75+	SOOTY TERNS		
3	BONIN Petrels		
4	FAIRY TERN		
1	BULWER'S (behind flock) Port side		
1	MASKED BOOBY (?)		
2	NEW ZEALAND SHEARWATER		
0832	1 Dark Rumped	off starboard close headed W.	
	1 Wedgetail		
0833	2 Sooty	off starboard headed N. W.	
0836	Wedgetail	off port bow	
0838	2 Wedgetails	off starboard	
"	White-tail tropic	- on water off starboard	
0840	1 wedgetail	off port headed east	
0841	1 dark rump ? wedgetail	dead ahead flying south	
0845	5-10 terns	small flock off port circling and flying east	
0845	wedgetail	off port going east	
0846	bulwers petrel	off star	
0846	White-tail tropic	off star, high	
"	Christmas Id. shear	off star, feeding in water, dropped into water	
"	wedgetail	off port - southeast	
"	2 bulwers	off port bow flying together	
0849	1 bulwers ?		
0856	sooty tern	off port flying east	
0858	wedgetail	3 off ~~bow~~ stern going west	
0858	3 sooty terns	off star high flying west	
0857	unidentified	sided off port	

SWS

DATE: Aug 2, 1963 WEATHER:

Pg. 4

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0859	wedgetail	off stbd bow	
0900	wedgetail	off stbd bow to port southeast	
0902	Wedgetail	port → starboard bow	
0903	Red-tail Tropic	flew star ⇒ port over helio deck	
0914	White-tail Tropicbird	off port bow - on water -	
0915	Bonin Isl. Petrel	off bow	
0916	Large flock ~50± Sooty Terns	flying high over water - difficult to view	
0919	5 Sooty terns	off Starboard	
0920	tropic bird	off star	
0925	13 Wedgetail	in flock on water came within 75 ft of ship -	
↓	1 Manx Shearwater		
	1 Sooty tern	flying south	
0930	30± wedgetail	in flock flying about ship (bow)	
0932	2 Sooty tern	flying high over ship	
0936	6 Sooty tern	flying high out 500-600 yds off star bow	
"	1 wedgetail	off star bow -	
0938	3 wedgetail	flying south of bow	
0941	1 Wedgetail	→ SW off bow	
0963	2 Sooty tern	flying E° off Starboard	
1020	X-mas Island	passed headed west	
1022	2 sooty tern	crossed bow headed south	
1022	sooty ? ≅ 200	far to north of ship large flock, feeding ?	
1024	wedgetail	passed ship headed south	
1025	RT tropic bird	approached from east, turned south flying about 100 ft. up	
1024	2 sooty tern	passed across bow headed to south low over the water	
1034	RT tropic bird	approached from east, circled ship and disappeared	
1036	RT tropic bird	same as above ? looking down continually as it flew	

DATE: 2 Aug. 1963 WEATHER:

Pg. 5

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1040	RT tropicbird	same as above? diving off stern picking; Prom about 100 ft. up	
1057	2 sooty tern	passed off bow headed south	
1057	Xmas shearwater	very close to terns, also headed south	
1101	Wedgetail	across bow ~~stn~~ star to port	
1115	WEDGETAIL (3)	2 flying together (same glide path) on starboard side 75-100 yds. Joined by a 3rd.	
1117	wedgetail	joined by a fourth	
1121	2 sooty terns	passed to starboard headed east, low over the water, calling	
1121	wedgetail	low over water around bow	
1133	wedgetail	several still astern of ship from star. to port at bow; lower water	
1143	wedgetail (4)	Starboard side in a group about 400 yds.	
1154	wedgetail (1)	Port side - C.T. moving away to S.	
"	Christmas Sh. (1)?	wedge moved off to starboard.	
1156	wedgetail (1)	under Port bow (25 yds)	
1156	Tern? (1)	white breast, ~~same~~ brown + white all around on head - brown on back.	
12:00	2 wedgetails	2 flying together from star to port across bow	
12:02	2 ~~Gray~~ X mas Is?	Brown on top, pitch black underparts bars of light + dark on wings.	
12:05	Red tailed tropic	~~on~~ circling over ship, altitude 60 ft circles 5 or 6 times. Wants to land?	
12:15	Red tail	leaves ship, follows school of large fish (3 ft)	
	Tern (1)	at high altitude (400 ft.)	
12:16	~~2~~ 3 wedgetails	High over school south of ship	
12:17	Tropicbird (Red)	from star to port across bow	
12:18	Gray-back tern	comes back to bow of ship.	
129	Tropic (Redtail)	Circles high (100 ft) over ship then leaves to east	
		leaves again	

DATE: 2 August, 1963 WEATHER:

Pg. 6 warm, scattered clouds, light wind

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
12.27	Wedgetails	several flying around bow. (2)	
1236	Sooty Terns	1 flying South, 5 north	
1236	wedge tails	4 flying in formation ship to South	
1243	Wedgetail	lone bird feeding along starboard	
1254	Sooty Tern	lone bird flying along starboard	
1254	Wedgetail	2 flying very close together	
1300	Sooty Tern	4 flying ahead of ship	
1303	wedgetail	lone bird off bow	
1303	Sooty tern	2- off bow	
1306	Sooty tern	5- 2 pairs and a single off bow	
1310	Sooty tern	3 +/- flying from starboard to port off bow	
1311	Xmas Is Shearwater	lone bird off starboard bow	
1312	Sooty Terns	7 flying from starboard to port off bow	
1313	Sooty Tern	12+ flying from starboard to port off bow	
1314	~~Sooty~~ Terns	5 " " " " "	
1315	Gray back Tern	3 crossing from starboard to port off bow	
1316	Sooty Tern	long bird crossed ship from starboard to port	
1317	Sooty Tern	2 flying around ship	
1320	Red-tail tropicbird	lone bird off port bow	
1321	Sooty Tern	lone bird flying star → port off bow	
1322	Gray backed tern	flying near ship → SW	
1323	Sooty tern	" " " "	
1323	Red-tail Tropicbird	" " " "	
1324	TERNS	150-200 at distance off starboard	
~~1341~~			
1341	wedge-tail	1 flying near ship → W	
1341	wedge-tail	1 flying off bow - probably same one as above	
1359	Sooty tern	overhead flying south	
1358	~~S~~ Sooty terns	off starboard, crossing midship	
1403	Gray-backed tern	flying south	
14:08	2 ~~wedgetails~~ dearguntera. 1 large, 1 small	Off port toward West Flying low off star bow	
14.17	Sooty tern	1 flying high ~~port to~~ Starboard to port	

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DATE: 2 August, 1963 WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LONG. LOCALITY
1434	Wedgetail	1, fiddling around off port 30 yds	
1436	——— terns	2, headed SE. off port bow, definitely Tern way shape of wing + flight, apperently all white or grey with marked black cap.	
1439	Wedgetail	4, 1, heading ship course 100yds	
1449	Sooty Tern	3, heading S 300yds swung to ship then headed S. again occasionally diving toward water	
1451	Wedgetail	1, 400 yds off port bow.	
1458	Bulwers petrel	About 400 yds. off starboard, moving east	
1459	wedgetail	off bow	
1513	MANX SW (3)	circled bow of ship (50yds), 15ft above surface.	
1521	WEDGETAIL (2)	PORT SIDE (75 yds.)	
1536	Sooty tern	4, Came in from dead ahead going E. swung	
1537	Wedgetail	So. occaisionally diving to ward water	
1542	Manx	2, off starboard bow 30-40yds.	
		2, off starboard to port to starboard 10yds	
1551	Wedgetail	1, off starboard bow working off N.E. 30yds.	
1616	SOOTY TERN (2)	approached from Starboard Stern.	
1617	SOOTY " (8)	diving as they approached	
1622	Bulwers petrel	app. from Port bow [W] - calling! across bow, plan to port.	
1626	Bulwers petrol	I see a above?	
1626	wedge-tailed	with Bulwers above? starboard to port.	
1628	sooty tern (1)	flying low → SW on ~~starboard~~ port	
1628	shearwater (1)	→ west starboard	
1636	Sooty tern (1)	South → across bow from Star to port	

DATE: WEATHER:

PS. 8

Aug. 2, 1963

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1645	Wedgetail	across bow star to port	
1650	Wedgetail	off star., flying east	
17:03	Wedgetail	across bow, star. to port going south	
1717	Manx Shearwater	pair off starboard	
1720	Wedgetail	lone bird far off starboard	
1723	Manx	lone " off " bow	
1732	Wedgetail	lone bird off starboard	
1800	Wedgetail	2 birds off port bow	No movement of ship
1803	Sooty Tern	2 off bow	engine bearing hot
1808	Wedgetail	1 off bow	replaced bearing
1812	R.T. Tropic birds (2)	behind ship	ship drifted till
1842	WEDGETAIL		2330 hours
1845	WEDGETAIL	off starboard about 1600yds. — along side starboard	2 Aug. 63
1856	Grey Backed Tern (3)	Port side flying NE (100yds)	
1902	Wedgetail	1, circling over garbage 300 yds off stern to port.	
		rain beginning at ~~1935~~ 1935	
2006	Terns	heard	
2010	Sooty tern?	FLU high over saucepan, as if to Lite	
		No Rain	
2020	TURNED ON	PORT LIGHT	
2045	Sooty tern?	Over flying bridge, payed no attention to light.	
		Water fairly calm light breeze no whitecaps	
2102	Sooty tern?	Heard out to port	
2248	Tern	Heard overhead	
		wind increasing up to 2 knots	

DATE: WEATHER:

PS-1

3 August, 1963 overcast, Dark, Light wind Sprinkles intermittently

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0610	Albatross??	2 reported by watch, I was unable to pick them up in the semi-light. Obs: Large bird with white on wings. Probably wedgetail	
0641	wedge-tail S.W.	From Star → Port.	
0643	wedgetail	lone bird off port bow - at water level	
0649	Sooty Tern	1 adult, 1 sub-adult off port bow - 20-25' above water	
0720	?	large flock 50± off port bow, barely visible through glasses	
		1 large bird in flock	
0728	Wedgetail	2 flying at surface of water off star bow	
0735	wedgetail	lone bird flying on surface off star bow	
0745	Wedgetail	lone bird flying at surface off port bow	
0757	Wedgetail	2 birds flying together at surface of water off star bow	
0820	MANX Shearwater	lone bird flying at surface of water crossing bow from Star → port	
0827	wedgetail	lone bird at surface of water on port side	
0847	wedgetail	lone bird 300 yds off starboard heading East	
0849	MANX Shearwater	two separate off starboard - one flying E + one N	
0857	Bulwer petrel	lone bird off port side	
0919	Sooty Tern	lone bird flying 75' above water going East	
0940	BULWER'S	PORT SIDE WITHIN 30 YDS. HEADED EAST	
0945	WEDGETAIL (2)	CIRCLING OFF PORT, ONE CROSSED TO STARBOARD ACROSS BOW.	
0950	"RED-TAILED" (?) TROPIC-BIRD	OFF PORT ABOUT 500 YDS. SITTING ON WATER.	
1023	White tailed tropic bird	1, sitting on water took off and circled ship. high over head, sighted off starboard bow	
1052	Wedgetail?	Sat on water 300 yds off bow of ship, flew around, sat again, and flew. Interesting pattern on back with contrasting browns & greys, pattern somewhat like N.Z. shearwater.	

DATE: 3 Aug. 63 WEATHER:

Pg. 2

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
11:23	New Zeal. Sh. Wa.?	Grey back, wing pattern, small size definitely noted. Flew with rapid wing strokes from bow where it may have been lite on the water, to port. Last bird may have been the same thing. Flew 5 ft above water.	
1202	White tailed Tropicbird	1, heading east at 100-150 ft up, circled ship then headed west. stayed about 5 min. gave small high pitched nasal "kek" fairly frequently	
1207	white tailed tropicbird	1, on water slightly off starboard bow about 300 yds. may be same bird as previous sighting. flew off until well ahead and settled on water again slightly off port bow	
1216	caught up with and passed aforementioned bird on water 150 yds off port bow		
1229	Dark-rumped petrel ? (W.O.W.)	STARBOARD — about size of wedgetail, but white body, back of wings grey-brown, secondarys light, bill dark. curled bow - closest 150 yds.	
1254	WEDGETAIL	SITTING ON WATER 100 YDS STARBOARD BOW - FLEW N.	
1259	WEDGETAIL (2)	500 YDS. OFF PORT BOW FLYING TOGETHER.	
~~1356~~ 1356	TERNS (4-6)	Starboard - 1600 yds.	
1419	40±5 Sooty Terns	Milling about off port.	all same flock
1420	~~Xmas Is.~~ (?) S.V.	OFF Port - All dark & large	
~~1429 Flock~~		feeding on fish, terns diving, shearwaters taking grubs at ~~those~~ fish that leave the water. Flying fish seemed to be the prey.	

DATE: 3 Aug. 63 WEATHER:

Pg. 3

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1436	Wedge-tail Shear.	gliding back & forth off Port.	
14:45	" " "	off Star. going east	
14:50	Bird W.T.S. spotted from	bridge off Star. → wedge tailed Shearwater	
1455	Bonin Island Petrel P.F.G.	Small tube nose, greyish on all of body, no particular Pattern on wings - no gliding but rapid flapping in search pattern similar to Shearwater flying low off Port bow. smaller than Wedge-tail -	
15:40	S.W. (Wedgetail)	Sitting on water, took off to Port, sat down on water again	
1622	wedgetail ?		
1624	RED TAILED TROPIC BIRD	600 yds off Port Bow	
		200 YDS OFF PORT MIDSHIPS FLYING SOUTH AT WATER LEVEL.	
1710	white-tailed tropic bird	flying high over ship from off the Bow	
1712	Red-tailed tropic	Feeding off bow, diving [redacted] into water	
1714	1 Juv. Tropic	Flying together at great height above ship (200 ft)	
	2 Red-tail Tropic	adults	
1719	Red-tailed tropic	Off port beam flying high	
1731	Wedgetail	150 yds. off port beam.	
1739	Xmas shearwater	Flying together off starboard, within 5 yds. of each other	
	Wedgetail "	were 3 birds, 3rd was probably W.T.	
	wedgetail (?)		
1756	WEDGETAILS (2)	Starboard midships to Port (200 yds.)	
1857	3 wedgetails	Displaying usual behavior, off port bow, 2 flying as pair. 3 staying generally together → all look the same.	
1906	W.T. Shearwater	Off port beam. Flying generally East.	
1930	2 Wedge tailed Sh.	Circling low as is characteristic, from Port to Star, as pair.	

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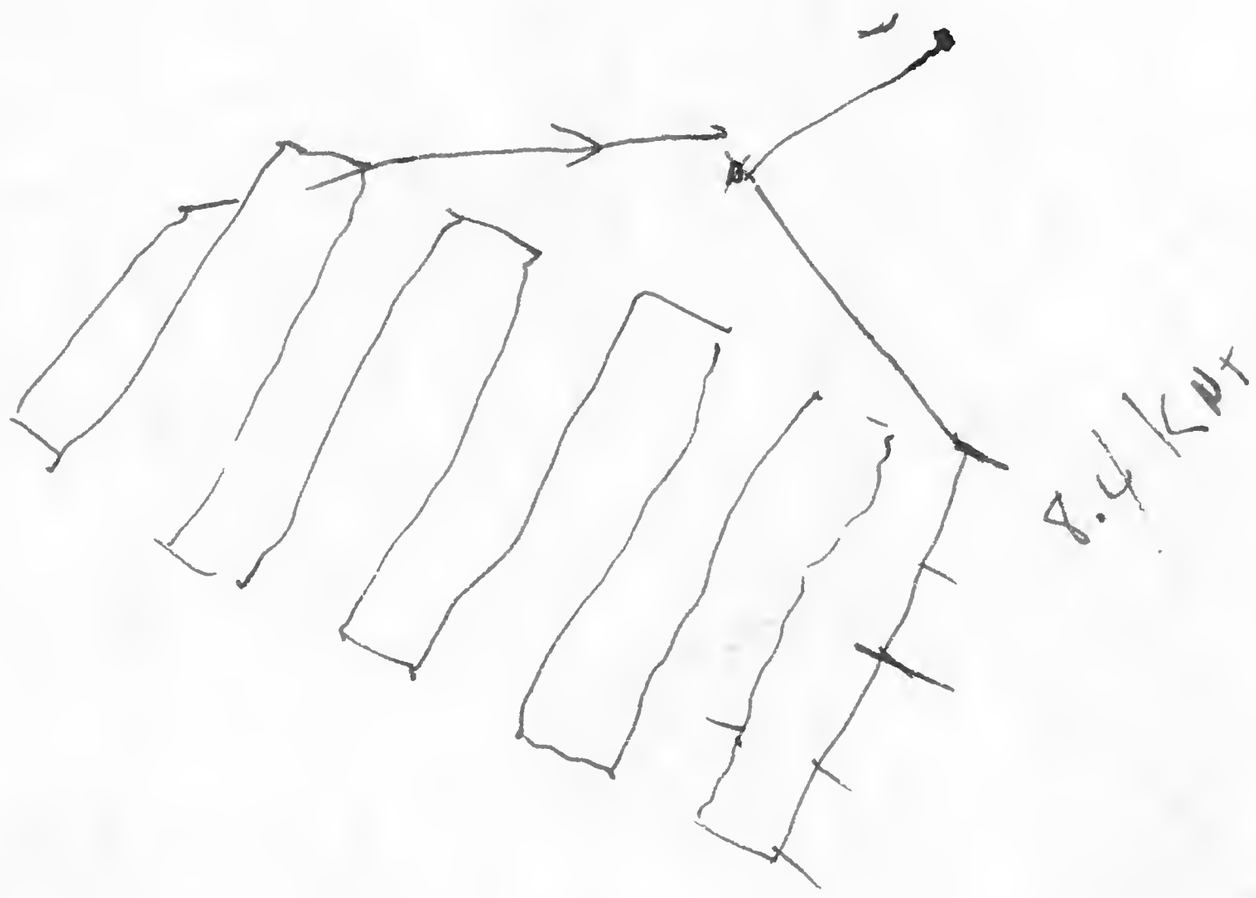


DATE: 3 Aug. 1963 STATION:

TIME	SPECIES	REMARKS, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
2017	sooty terns	several flew over headed southeast	
2145	wedgetail ?	crossed bow over water	
2150	? ?	CALL SKEE-SKEE FAINTLY OFF STARBOARD MID SHIPS	
2154	"wedgetail"?	crossed bow ~~starboard to port~~ port to starboard - seen by flash of white as turned.	
2333	sooty tern 4 Aug. ↓	calling, went over quite high	
0005	Sooty tern (2)	Port midships - nearly landing on fantail - calling.	
0405	SOOTYS —	Calling + circling mast + fantail for about 5 min.	
0210	Sootys—	Calling + circling mast + fantail for about 5 min.	
0250	SOOTYS (2)	circling mast and fantail + area about 50 yds at midships while calling - stayed about 10 min.	

DATE: 4 Aug. 1963 WEATHER:

Pg. 1

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0611	White tailed Tropic bird ?	voice in the dark - sounded like voice recorded on the third from whitetail first heard high off starboard bow then off starboard beam & back to bow.	
0649	Sooty Terns (3)	Heading SE about 100 ft up across stern 1000 yds.	
0653	Sooty Terns (7-8)	600 yds - flying E. flying about 40 ft above water.	
0715	Sooty tern	1; coming high (150-200 ft) from E, circled ship headed N.W.	
0716	Wedgetail	1; dead ahead off bow headed south	
0718	sooty tern	4; off starboard bow (150 ft up) headed North	
0719	Sooty tern	3) off starboard bow, low over water 10-20 ft 500 yds. out headed east	
0720	Bonin petrel	sitting on water directly in front of bow; sat up about 10 yds. away and headed west	
0726	Bonin Petrel	PORT BOW about 150 yds SITTING ON WATER - FLEW SOUTH (MAY HAVE BEEN SAME AS ABOVE).	
0735	WEDGETAIL	OFF PORT BOW ABOUT 100 YDS - FLEW S.	
0743	wedgetail	300 yds. off port bow, disappeared	
	Bonin petrel ?	400 yds. dead ahead, disappeared	
0750	wedgetail	came from east on starboard, then circled back astern	
0816	Sooty Tern	lone bird crossing from bow to port, about 25' above water	
0825	Wedgetail Shearwater	lone bird at surface of water ⇒ east along starboard	
0827	Sooty Tern	lone bird off port bow. within few feet of water ⇒ S.E.	
0827	Wedgetail (dark phase)	larger than wedgetail, uniform mottled brown, appeared to be same color all over, had dorsal wing pattern of a wedgetail	
0841	wedgetail	lone bird flying at water level along starboard ⇒ E	
0848	Sooty Terns	FIVE in group flying E off port - up to 25' above water - No tags	

DATE: 4 Aug. 1963 WEATHER:

Pg. 2

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LOCALITY LAT. LONG.
0857	Sooty Tern 1	bow → ~~EE~~ N ca 30' down to water level no tags,	
0857	wedgetail Sh. 1	stern → E normal flight pattern	
0859	Sooty Tern 2	Port → SE 40-50' above H_2O, no tags	
0900	Bonin Is Petrel ?	several hundred yards off bow	
0903	Wedgetail 2	starboard → E at surface of water	
0930	Whales 8-12.	several off starboard - some blowing - Spout was a thick mist, shapeless and not too high Spout. there were small and only a small portion of the dorsal ever came out of the water 7 in they looked very brownish	
0950	Tern? large white - several hundred yards off bow - appeared too large for the white tern		
1015	Wedgetail and Sooty ?	1, off starboard bow 75 yd flew to N.W.	
1024	~~Wedgetail~~ sooty tern	9, off starboard beam heading E, 400 yds.	
1029	wedgetail	one about 400 yds. off starboard heading east	
1034	R.I. Tropicbird	1, 400 yds. to starboard heading west flying low in water then landed	
1047	New Zealand ?	½ from starboard to port - 150 yds headed S.	
1112	Bonin I. petrel	off bow about 200 yds. headed west	
1143	Bonin I. petrel	approached from west - headed east, passed about 40 yds. off starboard	
1233	Wedge-tail Shearwater	3 - cruising off Starboard. normal behavior pattern	
1239	" " "	6 - 1 flying; 5 sitting on water. One of these flew and was a dark phased bird. The rest appeared to be normal light phases.	
1332	Sooty Tern 8	flying off starboard due E, 50-60' high in ragged line	

DATE: 1963 4 August

STATION:

Pg 3

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1410	Sooty tern Frigate bird	~~70~~ ~~80~~ 70-90 · dead ahead at 500-600 yds high over flock of terns.	
1441	Wedgetail	1, 400 yds off port bow headed S.S.W.	
1449	Wedgetail	1, 40 yds off port bow headed S.E.	
1513	Bonin Is. Petel	3, 50 yds off port bow. 2 in flight heading west. 3rd sitting on water took flight followed first 2.	
1544	wedgetail	about 1/2 mile off port bow headed west	
1545	Bonin I S ?	1, 200 yds off ~~sta~~ port bow headed S.W	
1546	Wedgetail	1, 300 yds off port bow headed W	
1550	? ? ?	1, 300 yds off port bow heading W. grey white above, white underparts, black wing edges acting like wedgetail	
1644	Chrismas Is. Shearwater	Gliding and turning off star beam.	
1655	Tern flock	Several miles off starboard. To far away for any identification or accurate estimation of numbers. at least 25 in flock	
1703	Wedgetail	Showing normal behavior off port beam	
1718 -	Red-tailed tropic	Flew high over ship (25 ft) and disappeared off port beam.	
1734	Bird —	700-800 yds off port bow - may be shearwater	
1753	Wedgetail	1, 500 yds off starboard beam headed west.	
1817	Wedgetail	2, 2 light + 1 dark, dark came from starboard to port to join the 2 light ~~one~~ ~~end~~. Dark one sighted 300 yds of starboard bow all three circled off to S.E.	
1827	WEDGETAIL (2)?	extreme range - white bellys flashing low on water.	
1843	white tailed Tropic Bird	immat. lone bird approached from SW, circled the ship 3 or 4 times - (yellow bill, short tail plumes no black on wings)	

DATE: 4 Aug. 1963 WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1857	Red tail Tropic Bird	lone bird far off starboard flying NW.	
1859	Bonin Is. Petrel	lone bird at surface of water off port bow	
1910	Wedgetail Shearwater	lone bird at surface off port bow	
1913	Wedgetail	lone bird at surface off stbd bow ← whale observed off starboard (blow globule spray)	
1915	Sooty Tern	3 flying about 100 ft over water → W.	
1918	Wedgetail	off starboard near horizon	
1919	Sooty Terns	30+ off starboard several hundred yards } spread out in about 3 groups	
		20+	
		25+	
1921	Wedgetail	2 off bow - one dark phase, + light phase	
1921	Sooty Tern	lone bird flying South - 100' above with no tag	
1924	Sooty Tern	lone bird off starboard flying W. at surface of water	
1925	Sooty Terns	flock of 20 off starboard ~~bow~~ flying South 15-20' up	
1925	whale	seen within 500 yds from port	
1928	wedgetail	lone bird at surface off port - ca 500 yds → West	
~~2044~~ 2044	Sooty Terns	} Over ship, Too	
2044	Red tailed Tropic (2)	}	
2100	Red tails	Perhaps same pair off stbd. beam	
2103	At least 1 Juv Tropic Red. Spotted with light over ship		
2108	1 Red Tail?	High over ship	
2120	Terns (4 or 5)?	Voices heard in the air above ship	
2134	Red tail Tropic	(at Least 2) Circling overhead	
2137	Wedgetail	off stbd, picked up with light	
2140	Wedgetail	off port spotted with light	
2143	2 wedgetails	off port also spotted with potent light	
2147	Red tail ?	Heard above ship.	
	Shear (Wedge)	→ Spott (off) stbd with light	
2154	Tropic Bird?	Heard above ship	
2158	Wedgetail	Seen off stbd	
2159	Tropic ?	Heard above ship.	

DATE: 4 August

WEATHER: Partly cloudy Moon full, scattered cumulus clouds on horizon calm, light wind

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
2201	Red tailed?	(R) calling low over ship	Probably all Sooty Terns Pfg
2205	Tropic Birds	Heard in distance, perhaps same as above	
2210	Tropic Birds	car heard to Port probably same as 2 above readings	
2213	Red tailed tropic birds	Heard calling around ship at least 2 on each side and 1 in center —	
2215	Wedge-tailed Shearwater 2	starboard	
2220	Tropic Bird	Heard high over ship headed West	probably Sooty Terns Pfg
2227	Red tails	Off star (heard)	
2229	Wedgetail	Usual behavior, pushed up in light	
2234	Wedgetail 3 Bonin Pet. Petrel	Together flying Back & Forth across bow —	
2248	Sooty terns	Spotted off Bow 10–20 ca. 30'	
2255	Sooty Terns	Very many (100+) in every direction high above. Ca 40'	
2257	Wedgetail?	Spotted off port bow	
2300	3 wedgetails	Off starbow	
2303	Sooty terns 5+	ca 50' up groups constantly passing over or else same ones continuously circling overhead	
2320	Sooty terns	Still calling around ship have been since last notation	
2322	wedge-tail 04 Sooty Terns	off starboard still around some seen in light but no tags could be seen.	

DATE: 4 August WEATHER: Moon full, scattered cumulus clouds on horizon Pg. 5
Calm, light wind

Pelagraphy II

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
2201	Red tailed?	(R) calling low over ship	Probably all Sooty Terns Pfg
2205	Tropic Birds	Heard in distance, perhaps same as above	
2210	Tropic Birds	ear heard to Port probably same as 2 above readings	
2213	Red tailed tropic birds	Head calling around ship at least 2 more sick and 1 more other —	
2215	Wedge-tailed Shearwater 2	starboard	
2220	Tropic Bird	Heard high over ship headed West	Probably Sooty Terns Pfg
2227	Red tails	Off star (heard)	
2229	Wedgetail	Usual behavior, pushed up in light	
2234	Wedgetail 3 Bonin Pet. Petrel	Together flying Back & Forth across bow —	
2248	Sooty terns	Spotted off Bow 10–20 ca. 30'	
2255	Sooty Terns	Very many (10+) in every direction high above. Ea 40'	
2257	Wedgetail?	Spotted off port bow	
2300	3 wedgetails	Off starbow	
2303	Sooty terns 5+	ca 50' up groups constantly passing over or else same ones continuously circling overhead	
2320	Sooty terns	Still calling around ship have been since last notation	
2322	wedge-tail 04 Sooty Terns	off starboard still around some seen in light but no tags could be seen.	

DATE: 5 Aug 63 WEATHER:

Pg. 1

Many scattered clouds, stong wind ~~to~~ SE → NW (0630)

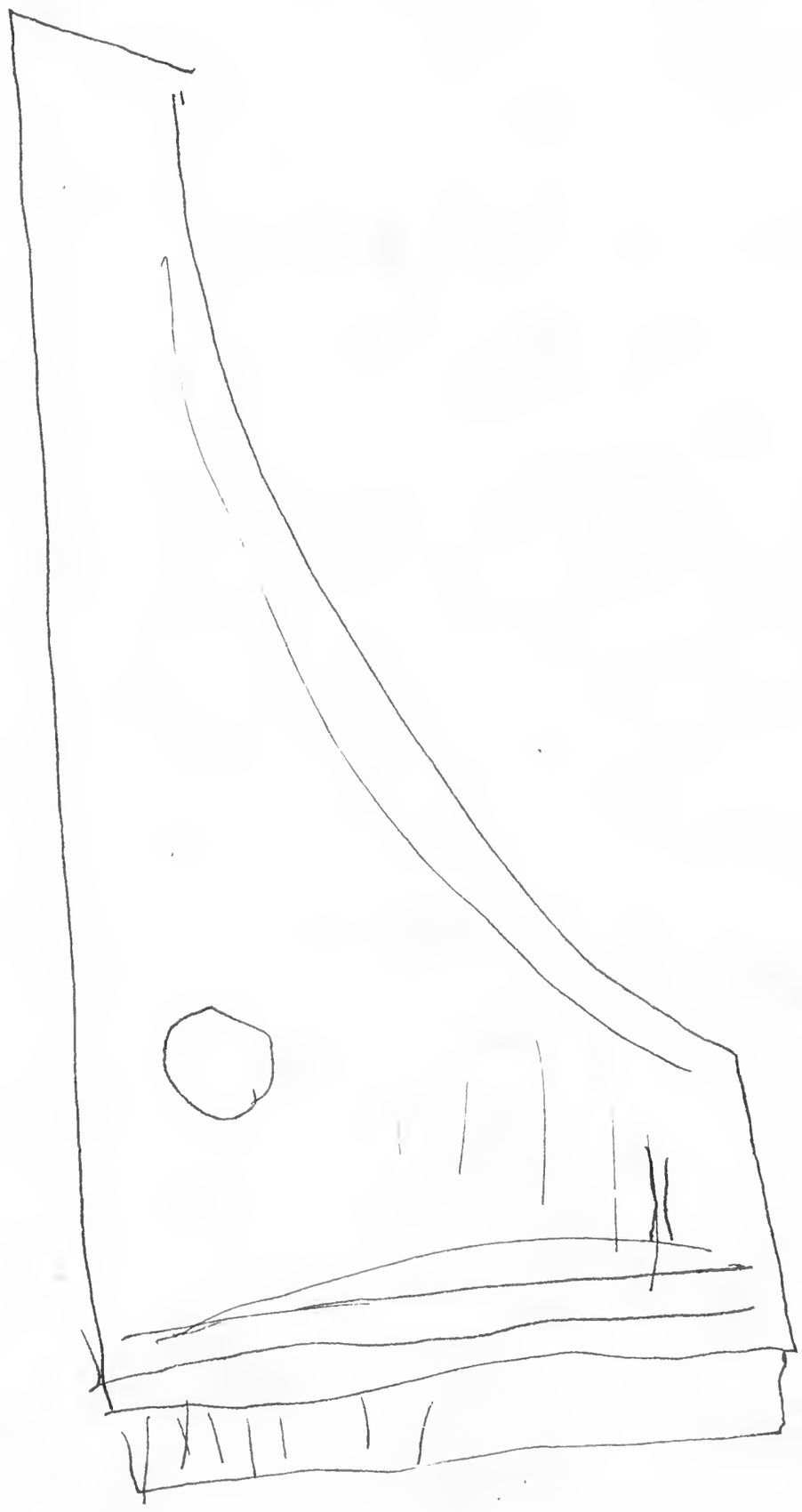
Sunrise began ca 0632
" " completed ca

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0601	sooty tern	1, heard of starboard bow	
0620	Wedgetail	3, 20 yds of starboard beam	
0638	Sooty Tern?	1 flying off	
0704	Wooly terns	1 with a big Big BRIGHT ORANGE BAND (53 mi SE Johnston) WEE Headed East flying at 100 ft	
0723	Wedgetail?	1, a bird off starboard bow 400 yds	
0725	Wedgetail	1, 300 yds off staboard bow headed S.	
0735	Wedgetail	1, flying over what seemed to be a shoot of tuna - short compact fish about 1½-2 ft long jumping clear of water.	
0742	Sooty tern	10, in floch 500-600 yds of starboard bow head. E.S.E.	
0744	R.T. Tropicbird	1, sitting on water dead ahead took off 25 yds. flew 2 head and landed again	
0845	WEDGETAIL	STARBOARD BOW TO STERN 100 YDS. → CIRCLED STERN.	
0903	Wedgetail ?	1/2 mile west of ship moving south	
0914	Bonin I. petrel	off starboard bow about 100 yds. moving north	
0945	WEDGETAIL	STARBOARD STERN 600 YDS — HEADING SOUTH	
0947	BONIN I. PETREL	STARBOARD BOW - CIRCLED BOW 100 YDS.	
0953	WEDGETAIL (2)	STARBOARD STERN 300 & 600 YDS FLYING S.	
1004	Bonin Is. Petrel	Flying close to water off Star., headed South	
1030		Still very windy with choppy seas hard to hold binoculars still - this may account for the scarcity of Birds	
10:33	A Shearwater-like bird	Off star. beam, impossible to identify	
10:43	2 Sooties	On close, flying S.W. Varied between 5-30 ft	
	2 sooty terns	Off port bow One tern clearly had a tag.	
	1 wedgetail	close off bow	
	1 Bonin Is.	Off bow disappeared to S.	

200'
70
135
N

DATE: Aug. 5, 1963 WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1048	Wedgetail	About 300 yds off bow showing US. behavior headed east	
1102	wedgetail	1, 200 yd off port, headed South	
1220	R-T Tropicbird	from Starboard stern heading S - 150 yds flying about 10 ft above water.	
1314	RT tropicbird	got up off water on starboard, moved astern and headed east, about 400 yds. from ship when it flew	
1353	WT tropicbird	approached from south, circled bow about 50 ft. up, headed NE, seemed to be having trouble with the wind	
1540	Tropic bird (Red-tailed?) R.J.G.	400 yds. off bow	
1640	Bonin Is. Petrel	flying at surface of water along Port → S	
1700 -	started first leg of the grid		
1738	wedgetail	off bow - 500 yds.	
1822	Bonin Is.	Off Port Beam - Heading SSW	
1830	Bonin Is.	Off port bow heading S.S.W. may become bird as above.	
1842	Bonin Is →	Off Port Beam, NE, could become as above.	
1853	1 Bird?	Sea Bashman:	
1913	2 Bonin Is. P.	Headed SSW about 300 yds off port, skimming water, but moving fast.	
1934	2 wedge-tail?	far off of starboard circling RM.	
1949	Bonin Is Petrel?	headed ESE like a freight train	
2005	wedgetail	crossed under bow, headed south east	
2016	wedgetail	approached from west, disappeared under the bow	
2020	wedgetail	off starboard bow, headed southwest	
2024	wedgetail	one about 15 yds. off starboard beam	
2150	sooty tern	one call heard overhead	
2157	Bonin I.? petrel	one about 75 yds. off bow ahead	



DATE: 6 Aug. 1963 WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0054	sooty tern	calling off starboard bow, prob. only one	
0312	tern	calling overhead	
0415		Full moon, calm sea, light breeze, scattered cumulus clouds primarily on horizon, fairly cool 65-70° F	
0441	wedgetail	passing NE off bow to port in light	
0555	sooty tern	about 40 feet up, headed NE	
0730	~~shearwater sp.?~~ N. Zeal.?	about 400 yds. off starboard, very white underparts, grayish above, no black on underwings, appeared to have a light forehead, low scaling flight over water, gliding with some flapping	
0758	Xmas I.	2 crossed bow about 200 yds. out headed southeast, low over the water	
0811	New Zealand S.W.	Flying rapidly off port beam	all these birds flying SE
0814	Manx Shearwater	Off star. beam,	
0817	Sheawater	White underparts, too far to identify.	
0819	Bonin Island Petrel	Star→Port	
0825	Xmas Is.	Star→ port, low on water, flying east	
0827	Wedgetail?	Star→ port. low on water	
0830	2 Wedgetails	Star→Port across bow	
0830	x mas Is.	Star→Port across bow	
0831	White bottom Shearwater	Off port bow 500yds.	
0848.	2 Xmas Is.	all flying within a few seconds of each other across bow toward SE.	
	1 Xmas Is.		
	1 Xmas Is		
	1 Dark Phase Wedgetail		
0858	1 Bonin Is.	Off Bow, Star to Port, flying low then high then low. Headed S.E.	
0904	sooty Tern	flying across bow Starboard to Port 300yds - 10ft above water SE	
0904	WHITE BREASTED SHEARWATERS	(2) 600yds off bow. Heading SE	
0907	Xmas Is.?	Close off port bow, flying — & wheeling low headed (as usual) SSE	

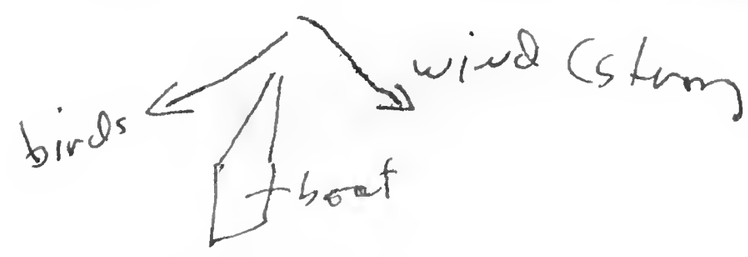
DATE: 6 AUG 72 WEATHER:

TIME	SPECIES	REMARKS, GENDER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0931	Bonin Is.	Flew across Bow → SE	
0936	Bonin Is.	Flew across Bow → SE	
1001	Sooty Tern 1	JW. bow → SE 50' up	
1004	Bonin Isl Petrel	→ SE	
1018	Bonin Isl Petrels 7	in flock circling over school of flying fish apparently feeding although we did not see any in the water or actually take a fish. The flying fish appeared to be being chased from below - great numbers would be gliding above the surface in unison - 1 → SE	
1025	Christmas Isl. Shearwater	across bow to port, flying SSE	
1033	Bonin Is. Petrel		
1056	~~wedgetail~~ Bonin Is ??	Starboard bow 400 yds.	
1115	~~Sooty Tern~~	Starboard & Port bow 200 yds about 50 ft in air. Headed SE	
1124	Bonin Is. ?	way off to port beam, unidentifiable	
1143	~~wedgetail~~ ~~Bonin Is.~~ wedgetail	Starboard across bow about 200 yds	
1155	N. Zeal S. W. ?	Off port beam sweeping & swooping close to water	
1200	straight up & down	Change course to North West (approx) (314° WNW)	
1220	New Zealand Shearwater	boat falls off starboard	
1300		3/4 overcast by this hour, light clouds, not heavy rain clouds; wind speed increased noticably	
1312		sighted mixed flock of birds about 400 yds. off port bow headed north	
	tropic bird ?	in flock	
	sooty tern	20-25 in flock at 50' up	
	Xmas Is.	two with sooties	
1315	New Zealand	passed on port, headed SE	
1322	New Zealand	passed on starboard, headed east	

DATE: 6 Aug. 1963 WEATHER:

pg. 3

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1327	Wedgetail (Dark phase)	1, 400 yd dead ahead going N.N.W.	
1402	Sooty tern ?	2 400 yds of port bow headed N.N.W.	
1411	8 Mas Is.	3, sitting on water, 200 yds of port bow took off together and stayed together headed N	
1440	Wedgetail ?	1, off starboard bow swung to beam and back to bow head N.N.W. 300-400 yds.	
		Moved out of heavy cloud cover about 1430 into clear skys	
1500	Sooty tern	2, 300 yds of starboard beam	
1540	Marshall's bird	???	
1600		Change of direction	
1613	Hiega milling	Flock of Tern + Shearwaters never came within 300 yds of boat no sign of what Hiega was feeding on. Flock passed roughly from Port bow → SW	
	Christmas Island Shearwater	20 +	
	wedge tail Shearwater	5 +	
	Booby Island Petrel	1	
	Sooty tern	10 +	
1810	#Wedgetail	1, 200-300 yds off starboard bow + beam seen in general area of garbage dump.	
1832	Wedgetail ??	left headed south 1, 400 yds of Starboard to port headed N.W.	
1937	Bulwers	1, 300-400 yds off starboard ~~off~~ crossed port headed N.W.	
2007	Bonin Is. ?	1, 200 yds off port Beam headed N.	
2317	sooty TERN ?	could hear cry from 1 or 2 terns over or along starboard (J.B.) Wind very noisey)	



DATE: 7 Aug. 1963 WEATHER:

pg. 1

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0730	Shearwater	1 - 0 - ~~the~~ off starboard bow 3-700yds —	
0730	weather	wind fairly strong ~~E-W~~ E-W, only a few white caps sea clear large clouds 65% cover 82°F	
0758	~~Storm~~ Petrel? Dark Rumped?	1 - N.W. 0 · off starboard beam, crossed bow to port - 100yds White underwing and bottom - white around head	
0806	Flock of Flying fish - 7	heading east	
0808	Weather	wind fairly strong E→W; fairly good no. of Whitecaps few overhead clouds 40% most on horizon 82°F	
0827	Flying fish	C.A. 30 → NW. off port.	
0826	~~Two~~ Dark Rumped	1, WSW → N.E. } both birds came up port beam 1, WSW → E. } together 100yds.	
0830	Flying fish -	C. ~~12~~ 80 → N.W. off port.	
0840	" "	ca. 10 → NW off Port.	
0850	Dark Rumped Pet?	1, N.W → S.E. off port stern to starboard ~~700yds~~ 900 1500yds Fairly high off water at times - 15ft.	
0900	Weather	wind ~~gone~~ ~~NE~~ S - whitecaps many clouds ~~same as~~ on horizon clear overhead - 20% ~~clear~~ Temp, 82 ~~76~~ °F	

DATE: Aug 7 0900 Pg. 2

WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0903	flying fish	Port bow -130) W	
0909	DARK RUMPED PETREL?	all white underside including wings W→S astern about 700 yds.	
0910	flying fish	about 200 W from Port bow	
0929	BIRDS (2)	W -800 yds - may have been	
0937	flying fish (1)	Sooty terns. 30-40 ft above water w/ starboard bow → E.	
1000	85°F scattered clouds, heavy whitecaps, wind from East, speed 20 knots (heavy) compass reading 050°		
1030	NEW ZEALAND? (1)	white underside & light grey back. NE → SW water level	
1047	Bonin I. petrel?	NE about 400 yds. low over water, disappeared water level	
1100	84°F scattered clouds, heavy whitecaps, wind from East, wind speed 20 knots (heavy), compass reading 050°		
1145	RT tropicbird	↳ SW SW 75 ft. up approached from stern, hovered amidships, then got blown back	
1200	85°F scattered clouds, heavy whitecaps, wind from East (055°) about 19 knots (heavy), compass reading 055°		
1300	84°F Scattered clouds, few white caps wind from E 117°		
1400	85-86° Scatt clouds few white caps - 055°, — 100° 13 knots 17 knots 050° compass		
1500	86° Scatt clouds 055° few white caps - 100° 14 knots		

DATE: 7 Aug. 1963
Pg. 3

WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1520	A Bird.	1, O, off starboard bow 300yds - not seen in glasses, it was just wandering over wave tops and disappeared in a trough	
1530	Shearwater?	1 ~~away off Starboard~~ → SE	
1539	Changed to a	N.W. Course -	
1600	85.5°F	scattered clouds, whitecaps medium heavy, wind from NE (12 knots), Course change to 316° @1559	
1637	flying fish (1)	NW from Port bow of Ship —	
1700	85°F	scattered clouds, whitecaps medium, wind from NE at about (10 knots) — 316° 318°	
1736		Wind to S.W. - Course 318°	
1730	Red tailed tropic	(?) 1, ~~Red Boobs going S.E.~~ approx 150 ft. ca 150 ft. up NE → SW	
~~1740~~			
1800	86°F	Scattered clouds, few whitecaps wind from NE Course 318°	
1808	wedg-tail	1 NE → SW ca 2'	
1809	Juv. Tropicbird no elect m wings	1 NE → O → E ca 75' up (4)	
1853	wedg-tail Shearwater	1 SE → NW } moving rapidly + together close	
	(white belly) Shearwater	1 SE → NW } to water surface, far off of Port	
1905	Petrels ? Type ?	2 O → E	
1905	Dark-rumped Petrel	1 O moving rapidly off the Zon	
1914	Same bird still around	→ ca NE tail back + forth —	
1909	wind ~~strong~~ medium NE → SW, few white caps, all horizons clouds, high thin scattered clouds overhead, 83° F		
1914	Sooty Terns	4 W → E 50' up (no tags)	
1943	Frigate bird	1 ♀ ~~O → NW~~ ~~ca 100-150 yds~~ up E → O → E (3)	
	Small white bellied Shearwater	1 O on water when first seen	
	Sooty terns	5 NW → WSW 10' up to 100' up, down wheeling about	

DATE: 7 Aug. 1963 WEATHER:

Pg. 4

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1955 2	Wedge tail Shearwater	1 → SE Few feet above H2O	
2033	Sooty terns ? ?	Off starboard NW → SE or E	
2045	Getting rough and foggy, heading into ominous dark cloud		
2052	We change course 218° → SWS		
2115	Boobies ? 1 38ft - off Portbow spotted in light → SE		
2121	Storm Petral (?) (?) 1, 15-20ft small bird, fluttery flight, white underneath, grey to dark grey above perhaps while on ramp → S		
2130	course → SWS, wind from SE ~~slightly~~ ~~SE~~, speed 6-10 knots; many stars but no moon, many black clouds in sky's sea calmer than during light hours est. temp. 70° F		
2150	heard 3 calls - terns?		
2205	heard calls, same as above		
2206	~~s~~ gray-back tern? 2 picked up in light about 100 pt. off water crossed bow, headed S		
2210	moon appeared over horizon		
2230	moon fully arisen		
2318	gray-back tern?	one flew over about 150 pt. up, → SW	
2337	sooty tern	4-6 flew over about 100 pt. up → W ?	
2345	sooty tern ?	3 calls heard high overhead	
2400		course SW wind from SE 5-8 Knots sea calm, sky generally clear with about 25% scattered cloud cover	

DATE: 8 Aug. 1963 WEATHER:

pg. 1

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0006	Bonin Is. tern,	1, 0 - off starboard bow crossed to port - ~~150~~ 75 yds	
0011	Sooty ~~tern~~ ?	2, one of starboard beam falling astern →N.E one off starboard bow heading S.E. 75 ~~00~~ ft up.	
0024	tern, Sooty ~~tern~~ ?	1, →N.E, 50 yd off starboard visable inside lights - ~~50~~ 25 ft up	
0042	tern, sooty?	1, → NE, 50 yds off port - high 100-200 ft.	
0100	weather	wind - mild approx 15° from E. Clouds - about 60% cover most to East + west	
0115	wind seem to be rising		
0118	Bonin Is. ?	~~1, probably~~ 1 in light off starboard fantail 20-30 yds	
0135	Bonin Is	1, 0, 50 yds of Starboard bow - possible same bird as of stern at 0118 since same was still there a 0125 dissappearing and reappearing every few minutes.	
0138	tern, Sooty?	1, E→W off port to starboard - high - 100 ft.	
0147	Wedgetail	1, 0→E 50 ft off starboard bow crossed to port	
0200	weather	wind - →E still mild but a little stronger than 0100 clouds fairly evenly scattered - 60%	
0205	wedgetail ? sooty tern ?	3, "going all over" seen by bridge on starboard said might have been 20 ft ups.	
0233	wedgetail	1, 0→NE, 50 ft off starboard beam light.	
0240	Wedgtail ?	1, 15-20 ft off fantail - watch said it was looking to set down. made several passes. fairly lary wing span shortish body light bottomed	
0246	Slight precipitation cloud cover 80-90%		
0251	~~Laysan~~ ? Albatross 10 ft over helodeck headed due south.		
0251	Light Rain		

DATE: 8 August 1963 WEATHER:

Pg. 2

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0308	Sooty Tern (1)?	Calling off Starboard bow — short screech-like cry repeated three times.	
0335	—	Scattered clouds - light rain stopped!	
0515	Sooty Tern (1)	Single cry from fantail!	
0600	Ships course	221 (SSW) very thin wisps clouds mostly on horizon, light wind, very few white caps, cool. wind from SE → SW	
0612	Sooty Tern	2 → NE ca 70' up calling (seen)	
	~~as above~~		
0653	now getting light enough to see by —		
0658	Tropic Bird	NE → E ca 200-250'	
0703	Noddy	1 WSW → NE ca 45 kts	
		much slower wing beats than sooty, smaller	
		silvery under wing linings	
0715	wedge tail	1 circling off starboard	
	Tropic bird (Red-tail) in molt	1 shot off Fantail (body in H_2O at 0724 - at 0731 bird picked up at 0736 Bird on boat	
0724	~~Bonin Petrel~~ Dark Rumped Petrel?	1 as ship circled to port of tropic bird	
0745	Christmas Isl. Shear	1 0 } together at first when tropic bird	
	Wedge tail shear?	2 0 } was shot.	
~~0750~~			
0845	3 boninds. or	Dark rumped 3 0-15 SE → NW	
0850	2 of above	2 0-15 SE → NW	
0900	more of above	1, 0-15 SE → NW	
0907	More of Above	1, 0-15 NE → SW	
0910	Wedge tail	→ SW 10 ft. above water	
0912	Wedgetail	→ E 5-10 ft. above water	
0912	Dark rumped?	→ S 10 ft. above water	

Dyptes

DATE: 8 Aug. 1963 WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0940	~~Boobies~~ Bonin ?	4 → SE about 300 yds. out 10-15' up	
0941	Xmas Is	3 sitting on water off starboard bow flew when 150 yds. out → SE 5-10 ft. above water	Same description
0945	Wedgetail	→ SE about 400 yds. out 10-15' up	
	~~Boobies~~ and Bonin ?	snow white underparts, body + wings, gray above, wing tips darker, white on forehead, dark collar	
0946	WT tropicbird	sitting on water off starboard bow flew when 200 yds. out → SW about 100 ft. above water	
1000		course → SW wind from SE about 5 knots about 50% cloud cover	
1012	WT tropicbird	1 ship several times → SW	
1020	WT tropicbird	SW → SE ↑ same as above ?	
1027	Bonin Is	1, 0 → S.W. 200 yds off starboard bow, 3-4 ft up	
1031	Bonin I	one off bow → SW	
1038	Bonin I	1, 0 → SSW 300 yds off starboard bow, 3-4 ft up.	
1042	Bonin I ?	1, 0 → SSW 800 yds off starboard bow - 3-4 ft up	
1043	Xmas I.	2, 0 → S 200 yds off starboard bow - 3-4 ft up	
1045	Bonin I	1, 0 → N 200 yds off port bow - 3-10 ft up	
1100		course → SW wind from SE 5-8 knots 50% cloud cover est. temp. 80° F	
1112	sooty tern ?	2 about 5 ft. over water → SSE rapid direct flight	
1126	Bonin ?	one → N low over water about 400 yds. off starboard side	
1140	Bonin Is. petrel	one ↻ N circling about 400 yds. off starboard bow, moving N, 5 ft. over water	

DATE: 8 Aug. 1963 WEATHER:
pg. 4

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1148	Bonin petrel	SW → N about 10 ft. above water	
1200	R.T. Tropicbird	1, directly overhead 100ft-200ft up. → N.N.E. Immature	
1200		course → SW wind from SE to E 8-10 knots, sea from E, swells 5-10 ft. 40% cloud cover temp. 80-85° F	
1320	Tropicbird??	1, 90 ft NE → SW	
1414	Shearwater?	1, O, SW → NE seen by watch at 1000 yds.	
1450	Large flock -	Wedge-tail + Sooty + ?? approx 80 birds, first seen 500-600 yds off port crossed bow several times flock scattered when ship gave chase.	
1624	R.T. Tropicbird	1, → SW. came in from over foretail then went O → NE	
1642	Shearwater	off port. 400-500 yds	
1713	Bonin Is.?	1, O → NE off port bow 500 yds - close to water	
1727	Tropic Bird - (Red-tail!?)	off port bow - then NE	
1750	Bonin Isl. Petrel	flying S.W. off port. 300-400 yds.	
1802	Xmas Is.	→ S about 5 ft. above water course → SW wind from SE 3-5 knots 40% cloud cover low percentage of white caps	
1810	RT tropicbird	E → O → N circled ship several times up about 200 ft.	
1840	Wedgetail?	1, O off starboard bow 500 yds close to water	
1900		course → SW, wind from SE about 5 knots 20 % cloud cover, few white caps sea from E, 3-5 ft. swells	

DATE: 8 Aug. 1963 WEATHER:

pg. 5

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1945	Sooty tern	3 NW → S playing together, sometimes up about 50 ft., other times about 5 ft. above the water	
1954	Wedgetail	2 ♂ SW, first noted off Fantail, moved by on portside, about 10 ft. above water	
2000		changed course → NW, wind from SE about 5 Knots, 40% cloud cover sea from E, 5-8 ft. swells, few whitecaps	
2148	~~Tropic bird?~~ SOOTY TERN	Two short squeek squeaks off Port bow.	
2200	Tropic bird	Circled fore mast & flew away to Port	
2241	SOOTY TERN(1)	- calling over Starboard bow	
2345	Sooty Terns (3)	- 2 off of Port midships ~~1 one~~ calling; one seen off Stern in light.	
2400	〃	Course 324 (NW) strong wind from NE Strong wind 10-15 knots, Clouds on horizons cool. Misty,	
0015	Sooty tern	1 NW → SE (heard)	
0030	Checked Fantail several hours	watch - no birds seen by him at least within last	
0100		Course 324 (NW) wind some what lighter still from NE. Sea relatively calm, scattered clouds	
0144	Sooty tern	Port Aft/Port	
0145		Change Course To 048	
0250	Large white bird tropicbird?	1 seen By Fantail watch off to starboard	

DATE: 9 Aug. 1963 WEATHER:

none

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0300	Weather	Wind - strong, E.N.E Clouds - except for few scattered overhead and on N. Horizon clear. Course - 048	
0400	~~weather~~	same as above except a few more cloud	
0500	weather	Wind strong NE Clouds fairly heavy cover closing fast from N.E. light rain Course - 048	
0506	Rain stopped - under fairly clear skies again.		
0545	A Bird - reported by fantail watch, was flying close to water and seen only as it was silhouetted by clouds on the Horizon		
0610	Bird ?	white object moving in starboard light against direction of waves	
0618	Bird ?	silhouette passed across full deck in moon light	
0645	Frigate ?	reported by fantail watch	
0650	Bonin I.	3 → W off port	
0707	Shearwater sp. ?	one → W passed starboard & off stern	
0715	Sooty tern	3 → N, 2 together about 50 ft. up; 3 → 5 ft. above water	
0715	Shearwater ?	one → E low over water	
0720	Xmas I.	19 → about 200 yds. off port 5 ft. above water	
↓			
0735	Xmas I.	40-50 → E about 200 yds. off port 5 ft. above water	
	Wedgetail	3 → E with Xmas	
	Bonin I.	one → E with Xmas	
0750	R.T. Tropicbird	(juv.) — S ~~OS~~ —O→ ↓ thenceforth down	
0751	Boobies sp.		
0754	Christmas Sh (3)	NE⇒	
0759	Boobies (2)	— O NW — circling whaleboat	

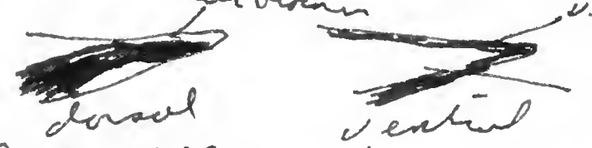
DATE: WEATHER:

FRIDAY 9 Aug.

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LOCALITY LAT. LONG.
0801	R.T. Tropic bird	(juv.) from NW over ship (75 ft)	
0807	Bonin I.?	over whale boat headed N	
0809	Bonin I.?	3 → N	
0811	Bonin I.?	2 off starboard bow → W	
0823	Bonin I.?	2 → W	
		(all these may be dark-rumped, no wing bar - look too large, got to collect some	
0830		Code on course → ENE	
0838	Bonin Bo.	1, 0-15 SW → NE	
0839	Christmas?	1, 0-15 SW → NE	
0843	RedTail (adult) Tropic	1, 50 ft SW → NE final at mussel.	
0851	Sooty tern	2, → S, 200 yds to port.	
0855	Wedgetail?	1 → W, 100 yds & star. all dark is it dark phase or Xmas?	
0900	Bonin Isl	lone bird off port bow - 200 yds	
0915	Bonin Isl?	lone bird off port about 400 yds → W.	
0916	Bonin Isl?	lone bird off port about 500 yds.	
0930	Wedgetail? Xmas Isl Sooty	flock of 20-30 mixed species off port then crossed over near bow - → NE low over water	
0959	Bonin Is.	one → SW about 15 ft. up	
1012	Dark-rumped?	one → SW about 15-20 ft up.	
1028	Xmas Isl or wedgetail	dark. lone bird at water level 150 yds off starboard → ~~SE~~ NE → SW ~~NE~~	
1029	Sooty Tern	3 birds off starboard about 200 yds ~~SE~~ → ~~NE~~ NE → SW	
1035	Wedgetail	1 dark, 1 normal - off port 250-300 yds at surface NE → SW	
1058	Wedgetail	lone bird at surface off Port bow 300 yds → NE	

DATE: Pg. 3 WEATHER:

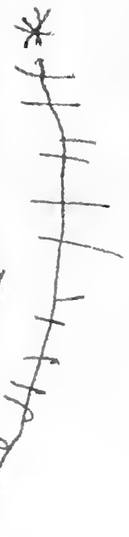
FRIDAY 9 Aug.

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1105	Boobis [sic]	off port bow 300 yds at surface ~~NE~~ SW → ~~SW~~ NE going up wind	
1107	Wedgetail ←	off starboard at surface 15 @ 400 yds. SW → NE	
1118	Wedgetail (1)	off Starboard bow running with wind from NE → SW about 250 yds.	
1120	Shearwater Sp?	white underparts, light gray above - off port, crossed bow to starboard SW → NE (N.Z. sheer a dark rumped ?) J.Q.	
1128	Wedgetail	lone bird out 300 yds off starboard - SW → NE at surface	
1140	Shearwater Sp.?	lone bird off starboard 100-500 yds at surface → NE. (very light underparts, light gray above -)	
1203	Wedgetail	lone bird off starboard bow littlerally wind blown off course	
1237	Shearwaters ? Dark Rumped Petrel	2. → SE 1. white underparts light brownish dal brown back  a lot of white on head (Possible whole forehead white - about size of Wedgetail (what I have been calling Dark - rumped Petrel	
1405	Flock of Shearwaters	250 ± 50 [~~all~~ ~150 all dark (dk Phase wedge-tail 5-10 Dark-rumped Petrel ? 1 - frigate bird 50 ± 10 Sooty Terns. (to most part opposite direction) → SW Sm school of ca 50 flying fish jump in middle of flock	
~~1412~~	~~wedgetail~~	~~SW → NE about 50 pt. up~~	
1412	wedgetail dk phase ?	2 → S 5 pt. above water	
1440	Wedgetail dk phase ?	1 → NE just above water, 150 yds off port	
1451	wedgetail dk	one → SE 5 pt. above water	

DATE: 9 Aug. 1963 WEATHER:

Pg. 4

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0902	Wedgetail / dk.ph. Bonin Is.	1 O→E 200 yds # port close to water	
1503	Sooty tern	1 O→S.E. 200 yds # close to water	
1510	Wedgetail dk.ph.	3 →S.E. 50 yds - 40 ft up	
1512	Wedgetail dk.ph.	1 O→SE 100 yds 10 ft up	
1515	Wedgetail dk.ph.	1 O SE 200 yds close to water	
1522	Wedgetail ?	1, O→E 300 yds of starboard close to water	
1550	turnstone Rodday	one approached from SE, shot and killed as it crossed bow about 50 ft. up	
1708	Petrel, Kermadec	1 O→SW light spot dark flash dorsal ventral	
1720	Frigate bird	1 O→W	
	Petrel (white bellied)	O→S	
1751	Sooty tern	15-20 O → S about 50 ft. above water	
1755	Wedgetail	1, O→NW. right above water, 200 yds	
1757	Tropicbird	1, right over water, 500 yds.	
1842	Sooty tern *	50 50	
1850	Bonin Is.	2 → N.N.W Wering from 30 to 100 ft up Frigates - in same flock high up, 1 doz. 500 yds	
1900	Wedgetail	1, O→S.E. close to water 200 yds	
~~1950~~ 1915	Bonin Is	1, O→S. 5 ft off water, 150 yds of starboard 3, →S. Eight off water, 400 yds of ~~port bow~~ dead ahead	
1954	Dark Rumped ?	1, O→NE. 200 yds off port bow at water level very white underparts, gray and darker contrasting back - almost wedgetailed size.	
2011	Bonin Is ?	1, O→S, 200 yd off starboard, 10 ft up	
2127	Tropic Bird	1 O silent	
2315	Rain		
2325	Rain stoped		



DATE: 10 Aug. 1963 OBSERVER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0200	tropicbird	reported by officer on bridge; in	
		starboard floodlight	
0300		course 048° → NE, wind from E	
		about 15 Knots; 30% cloud cover,	
		½ moon about ⅓ way up its arc	
0332	sooty tern	heard one call → N up about 200 ft.	
0334	sooty tern	one → N seen in floodlights approaching	
		from S and picked up in spot light	
0350	sooty tern	heard 2 calls → N over ship	
0400		changed course to 315° → NW, weather	
		info as for 0300	
0402	sooty tern	one bird calling passed over ship about	
		75 ft. above water W → E gave	
		scolding call while over ship	
0435	sooty tern	one in starboard floodlight about 20 ft.	
		above water, circled astern calling.	
		headed E → W	
0440	sooty ?	off starboard flood, low over water	
		→ NW	
0455	sooty ?	off starboard flood about 40 ft above	
		water → SE	
0500		no change in weather except	
		wind 8 – 10 Knots	
0520	sooty tern	approached from W about 75 ft. up	
		when spotlight hit him he	
		swerved to NW	
0527	sooty ?	headed SW over stern about 30 ft. up	
0529	sooty ?	off starboard light about 30 ft. up.	
0530	"	circling astern	
0531	sooty tern	call overhead	
0537	sooty tern	call overhead	
0545	Wedgetail	circling off starboard, I shined the	
		spot on him for several minutes	
		and he flew into the ship	

DATE: 10 Aug. 1963 WEATHER:

Pg. 2

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0614	Sooty tern	over stern, calling, 50 ft. up → E	
0640	Wedgetail	3 off starboard	
0641	Sooty tern	one N → SE about 75 ft. above water right over the ship	
0648	Wedge Tail (2)	Port midships flying together, 100 yds. circling.	
0651	Wedgetail (2)	One dark, one regular, off Starboard 150 yds. circling	
0654	Wedgetail (1)	Port midships - 100 yds. - flying NW → SE	
0659	Wedgetail (1)	600 yds off Starboard flying N → S along water.	
0704	Wedgetail	one SW → N low over water	
0705	Sooty tern	2 NW → SW about 10-15 ft. above water	
0705	Wedgetail ?	with terns NW → SW at surface of water - might have been dark-rumped W.O.W.	
0705		changed course → SW 225° sea from SE very few white caps, swells 5-10 ft. wind from SE 3-5 knots 6000 clouds	
0717	Dark-rumped ?	NW → SE just over water, large size pure white below, grayish above, 50 yds. away	
0725	Wedgetail	2 → 5 5 ft. above water 300 yds. off bow	
0735	Sooty tern	one NE → NW mixed team, about 50 ft. above water	
0750	Wedgetail (1)	off Port bow 100 yds → SE	
0753	Sooty Terns (9) Wedgetails (2)	- across bow from Starboard about 500 yds - Sooties flying low on water 15 ft. → SE	
0755	Wedgetails (2)	- across bow from Starboard 150 yds → SE	

DATE: 10, Aug., 1963 WEATHER:

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TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0759	Wedgetail (1)	from Starboard 500 yds. off bow → SE	
0802	Wedgetail (1)	from Starboard bow 200 yds. off bow → SE	
0805	Sooty Terns (3)	from Starboard 500 yds off bow → SE & flying	
0812	Sooty Tern (1)	low (10 ft.) over water. across bow (Starboard) 600 yds → SE, 30 ft.	
0813	Tropic bird (R.T.)	up from Stern about 60 ft in air heading → W.	
0815	Wedgetail (2)	from Starboard about 100 yds circled bow once & headed SE.	
0818	Wedgetails (2)	from Starboard about 100 yds heading SE.	
0819	Wedgetail (2)	from Starboard about 200 yds heading SE. off Port bow 300 yds. (20 ft above water) flying SE.	
0821	Sooty Tern (1)	from NE → NE	
0837	R.T. Tropic bird		
0840	Bonito ? (1)	small, light underpart, mottled grey-black back - wing tips darker. from Starboard 200 yds → SE.	
0851	sooty tern	3, → S.E., 40 yds off starboard, 30 ft up dropped to water level.	
0858	Sooty Terns (15) Wedgetails (2)	flock from NE → SE from Port stern. 300 yds.	
0915	Rain began	ship headed 224° (SW	
0930	Rain stopped	heavy cloud cover, cool, rain → W N W	
		" " " , cool, rain → W N W	
		wind heavy → W N W	
1058	Shearwater (all dark)	see Bookmark 1 only 1040 apparently feeding but too far out to identify accurately one would imagine, the shearwaters	

DATE: 10 August

WEATHER:

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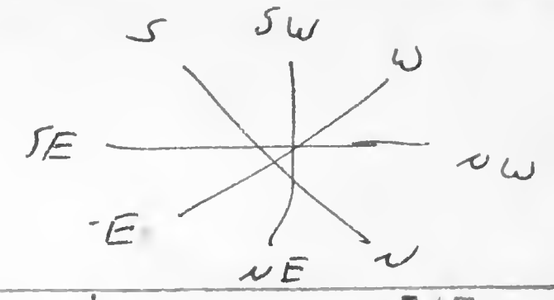


TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1111	Wedge tail (Dk. phase)	3 ○ Possibly part of last group & possibly next	
1128	Dark-rumped Petrel?	1 ○ > ventral wing	
1130	Wedge-tail (Lt. PH) Shearwater	1 sitting in water (shot & missed) to flew →SE	
1157	Wedge-tail Shearwater (Lt. ph)	1 NW → SE	
1200	Wedge-tailed Sh. (lt. ph.)	1 ○ off starboard	
1211	Bonin P. (2)	off Port bow → SE (100 yds)	
1205	Sooty tern Wedgetail	5 - 100 yds off ~~port~~ Starboard to port 2 - 100 yds off starboard to port just above water - sooties coming up to 60 ft up ○→ESE, one tern down in wave troughs making like petrel	
1217	Flock	dozen sooty upper 20's 3-4 Wedgetail over water 500 yds ahead ○→E, some dark some light Wedgetails. sooties up to 100 ft.	
1235	WT Shearwater	on water off port bow — shot	
1247	WT shearwater	→ E just over water	
~~1300~~ 1306	Dark rumped?	1, ○→W just over water 200 yds off starboard.	
1345	Frigate	1/2 mile off stern, seen 100 yds. up > soaring → SE	
1400		course → SW wind from SE 3-5 knots hot, sea from E swell 5-10 ft. 80% cloud cover	
1435	Wedgetail	2 N → S low over water, one dark and one light	
1440	Wedgetail Sooty tern	4 → S 6 → S } together shearwaters low, sooties 50 ft. up	

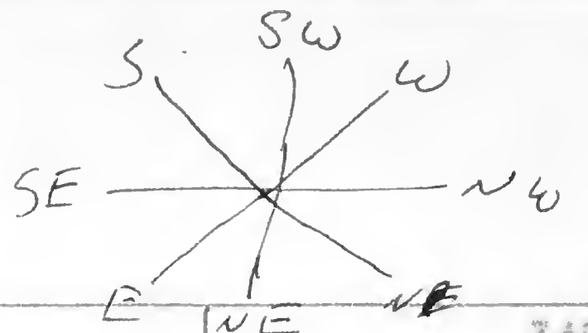
DATE 10 Aug. 1963 SEABIRDS

Pg. 5

TIME	SPECIES	NUMBER, WHERE, DIRECTION, DIV. OF FLIGHT	LAT. LONGITUDE LOC.
1445	Sooty tern ?	50± people milling around about 50 ft. above water SSW of ship 1/2 mile or more	
1450	Sooty tern	2 pass over ship → S about 50 ft. up	
1459	Wedgetail	1 → S just over water	
1455	Sooty tern	15 } fishing off starboard bow 15-20 ft water	
	Wedgetail 1 }	→ NE diving to water	
1503	Sooty tern	50± ⊙ pilings off port side, people loaded → NE, many swooping and diving to surface of water	
1511	Sooty Terns (6)	~~Port bow~~ Starboard bow - at limit of vision -	
1521	2 Wedgetails	2, 0-10, SW → NE	
1600	Sooty tern	1, 30 ft, SW → E Made pass at bow.	
1724	Sooty Tern	1, → SE, ~~dived~~ ahead ~~75~~ yds, 100 ft up.	
1737	Large flock Sooty terns	circling and wheeling like fishing 1000 yds off starboard bow. 50± approx → NNE up to 400 ft, many close to water 15-20 ft up	
1745	Wedgetail -	1, ⊙ → N, right off water, 200 yds port to stern.	
1751	Wedgetail	1 ⊙ → SE, right off water 100 yds off starboard	
1755	~~Wedge~~ Tropicbird sp.?	1 → ENE. 200 yds off starboard, 200 ft up	
1800-05	Scattered school of flying fish, breaking out of water as individuals C.A. 10-15 small in size		
1810	Bonin Is. ~~Petrel~~ - Bulwers - shot.	1, looked like just rising from water 30 yds off starboard.	
1820	Flying Fish	1, same both birds together - shot	
1825	Tropic Bird	school 30+ in area when Bulwer was shot	
		(1) W → N about ~~75~~ ft + 1 Mile.	
1852	Tropic birds	2 → N 150-200 yds up	
1855	Sooty Tern	1 150-200' → NNE	
1859	Tropic bird	1	
1906	Shearwater	1	

DATE: Aug 10

Pg 6



TIME	SPECIES	NUMBERS, COURSE, ELEVATION, ETC. OF FLIGHT	LAT. LONGITUDE LONG.
1911	Wedge-tail Shearwater (white phase)	2 O→NW [illegible] N N W	
1930	Wedge tail (light ph.)	1, O→WNW, 65 yds off port crossed to starboard just off water.	
1950	Sooty tern	2, O→W, 5-30 ft up (varying height) 100 yds off port	
	Tropic bird	1, → NE, 150 ft up, 200 yds off starboard	
2042	Sooty tern	1 → NE (calling, in light 40-50 ft)	
2114	Sooty Tern	1- off Starboard could hear the cry J.B.	
2120	"Big White Bird"	= 1 Tropic Bird Sp? circling over lights on fantail JB	
2130	"Another Big White Bird"	= 1 Tropic Bird Sp? over cargo lights AFT JB.	
2307	Tropic Bird Sp?	circling over lights on aft tower JB	
2315	Tropic Bird Sp?	flying from Starboard to port in front of "bird both" JB	May have been same bird -
2355	Sooty TERN	2 flying from the W over the helio pad (50' high) and going S.E. could plainly see there were no color tags - JB.	

DATE: SUNDAY
11 AUGUST 1963
Page 1

WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0017	Sooty Tern	(2) showed over ship & flew away Stern calling.	
0102	Dark Rumped	? - circled ship - disappeared astern; altitude from water level to 50 ft.	
0210	Sooty ??	coming over ship Stern - moving low &	
315	Tropic birds	2 35-40 ft circled ship in light, came from stern,	
340	Trobicbird	1, 30-40 ft, circled ship may be same bird as above could have lit forward	
440	Wedgetail	1, 10 ft, SE → NW	
455	Tropic Bird	1, 30-50 ft → NW(?) circling ship	
0600		course 315° → NW, wind from NE 8-10 Knots, scattered clouds few white caps	
0720	Dark Rumped?	1, 0 → S.E. 300 yds off port close to water	
0736	Wedgetail	1, 0 → S.W. 200 yds ahead; off to port just over water	
0750	Frigate	1 moving slowly SE from 25 to 100 ft above water side off port side	
0755	Sooty tern ?	small flock around and beneath the frigate → SE	

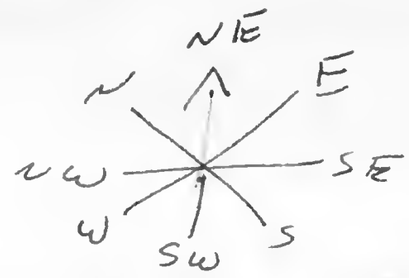
DATE: 11 Aug. 1963 WEATHER:

Pg. 2

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0800	Sooty tern	3 → SE 50 ft. above water	
0800		course 315° → NW wind from NE 5 Knots sea from SE, swells 5-10 ft., few white caps, scattered small clouds	
0813	Sooty tern	3 → SW about 50 ft. above water	
	" ?	one → NW about 500 yds. off port	
	Shearwater ?	one → SE about 600 yds. off port	
0814	Dark-rumped ?	one N → SW low over water 200 yds. off port	
0820	Wedgetail	one SE → NW just above water	
0822	terns ?	large flock (20-30) spotted about 1000 yds. ahead 50-100 ft. in air	
0830	Dark-rumped ?	3 → NE across bow	
0831	Sooty tern	flock of 50± → NE from 10-50 ft. above water	
0846	Sooty tern	4 → 5 up and down 5-50 ft. above water; in line	
0932	Change course	high thin scattered clouds, wind strong 050(NE), wind from east at 11 knots	
1000	Wedge-tail (Lt. Ph.)	1 ○ → NE moving faster than ship	
1015	Flock	~~Sooty terns~~	
	Sooty terns	ca 50+ → E	
	All dark shearwaters	20±3 → SE	
	wedge-tail (Lt Ph)	4 ○ → SE	
	Tonni Petrel ?	2 ○	
	a 10 longer birds	- may have been Fr. jaegers, but too far off to be sure	

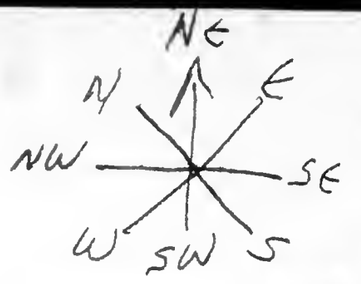
DATE: Aug 11 WEATHER:

Pg 3



TIME	SPECIES	NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LONGITUDE
1043	Sooty tern	3 ♀ moved from 5-10' up ↗ SSE between 2 rain storms - just at edge of one of them, flying away from storm	
1103	Wedge-tail	1 ○	
1112	" "	1 ○	
1142	" "	1 ○	
1142	Red-tail Tropic Bird	1 ad - (w black on wings) circled 3-4 times	
1150	Tropic Bird	1 ○	
1150	wedge-tail	1 ○	
1154	Bird	1 Tern size + shape, all white flying low, skimming the water -	
1200	Wedge tail (1)	across bow → 5 - 200 yds.	
1241	Wedgetail (?)	1, 0-5 ft SW → NE Light Back	
1242	Christmas Is.	1, 0-5 ft. SW → NE	
1308	X mas I s.	1, 0-10 ft. N → S	
1315	Wedgetails	2, 0-10 ft NE → SW	
1316	Wedgetail	1, 0-10 ft SW → NE off port Beam	
1359	New Zealand Shearwater	- black wing around white neck - gray back with black W : from bow NE to Port heading → SW.	
1412	Wedge Tail New Zealand S.	(1) Starboard bow 300 ~~yds~~ yds. from (1) SW to NE. flying together.	
1425	entered main ocean		
1428	Wedgetail (1)	400 yds Starboard NE → SW	

DATE: Aug 11 + 12 WEATHER:



TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1430	Wedgetail	2, 0-20ft NE → SW	
1437	2 Birds (perhaps bulwers)	NE → SW	
1450	Wedgetail (F)	1, sitting on water flew SW → NE	
1456	Sooty	1 50ft NE → SW	
1511	Sooty tern	2 → SE just over the water	
1550	Sooty tern	2 E → NW about 30 ft. over water	
1600	Bulwer's petrel	one SE → NW low over the water	
1757	Tropic Bird	1 ⓞ → SW 100yds	
1757	Shearwaters ?	3 seen by Fan-tail crew	
1820	Wedgetail	1, O → S 75 yds off starboard bow just over water	
1830	Shearwater	1 O	
1834	wedgetail Shearwater	2 O → SSE	
1859	Sooty Tern	1 → SE varied from 5' above to 30 ?	
1920	tropic Bird	1	
1929	Wedge-tails	3 ⓞ	
1930	Sooty tern	1 → SE	
2000	Sooty Tern	1 NE → SE	
	Wedge-tails	2 O	
2024	Tropic Bird	1 → SE	
0	THERE ISN'T A GRUNT OUT HERE !		
0023	Wedgetail.	1, in light off fantail - 3-4yds, 30ft up above water, shied away from spot. O → E	
0050	Wedgetail ?	1, in fantail light, 20-30yds. could not catch in spot. O → E	
0115	Bonin Is ?	1, in spot from bridge, 1ft off water 40yds started down beam shied off starboard O → E	
0124	Bonin Is ?	1, same spotting behaviour as above, spotted from fantail (same bird ?) O → E	
0145	Shearwaters ? Cat Bank Rump ? OVER	1, off fantail starboard, just over water, 30yds out. O → E	

0215 Bonin Is ?? off starboard fantail, 70 yds just over water, light color only guide, to far for size judgement well o-> E

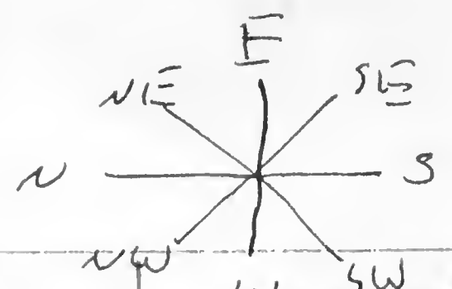
0235 Bonin Is. off starboard fantail, ~~[redacted]~~ 10 yds faded off in spot. o-> E

0435 Sooty tern 1 -> SW

0542 Wedge-tail 1 ~

DATE: 12 Aug. 1963 WEATHER:

Pg. 1



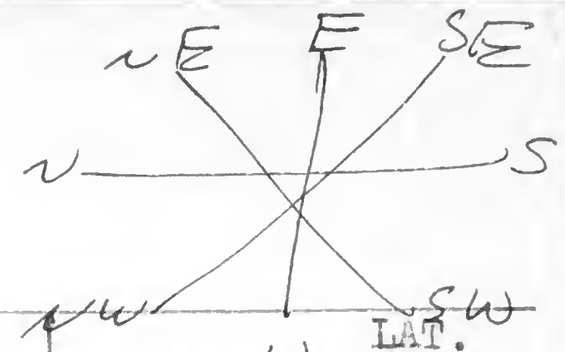
TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0735	Shearwater	1, Off Bo~~s~~tern, seemingly watch, white belly	
0815	Sooty Tern	1, 50ft, → NE	
0824	Sooty Tern	1, 50ft → E	
0824	Wedgetail	1, 0-5 ft. → E	
0857	Wedgetail	1, 0; → W	
0915	wedgetail	lone bird at surface off bow → W	
1002	Wedgetail	lone bird at surface → E	
1020	Red-tail/Tropic Bird	lone bird following ship off stern	
1232	Wedge-tail (et ph)	1 ~~AA~~ → NW	
1253	Sooty tern	1 ca 25' kept trying to fly into wind but constantly being pushed back, ft must have deliberately tried to fly into the wind 4 times before giving up and flying in exact direction of wind → S.W Checked with weather man who said wind speed at this time was 15 knots.	
1310	Wedge-tail	2 (not together) both → E very slow flight (probably due to 15 knot wind).	
1327	Terns (Sooty?)	2 @ 75' → NW or E general trend no direct flight	
1333	Sooty tern	1 → SW being blown before the wind which is of least 15 knots as before. bird tried ~~many~~ 4 times & turn & fly into wind but could only last less than 3 seconds each time before being blown before the wind -	
1335	Tern?	1 on horizon	
1338	Wedge-tail	1 N → S	
1419	wedge-tail	1 N → S	
1429	Sooty tern	10 flock in ~~NNW~~ 25' ~~@~~ → NW	
1440	Sooty tern	20 flock in ~~NW~~ 25' → E general tendency for direction (Wisps of undecided that may be seen together)	

14431 S → N standard 7E

1451 14 W → E S-10 regs

DATE: 12 August

WEATHER: P & C



TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LOCALITY LAT. LONG.
1440	Wedge-tail	1 ⟶ SW	
1443	Sooty Tern	1 ⟶ S → N joined flock of 20 still flying off to Port. these terns were flying into wind but the wind has reduced to 10 Knots. the	
1451	Sooty tern	14, ~~6~~ W → E, 150 yds off port, 5-10 ft up.	
1455	Wedgetail	1 O → N.W., just over water.	
		the above flocks of Sooty terns appeared after the 15 Knot wind had been reduced to 10 knots. Evidently the birds have no trouble in general today but are having trouble because the wind is too strong from generally SE as soon as the wind dies down the terns will ? (Keep checking wind speed direction, correlate with all sooty tern flights	
1514	Wedgetail	1, 0-5 ft, ⟶ S	
1516	Sooty Terns	4, 25 ft ⟶ East, 2 were headed W but changed their direction.	
1520	Sooty Terns	10, 40 ft ⟶ S	
1536	Wedgetails	2, 0 ft ⟶ E } 3 hit, 2 die	
1538	1 more Wedgetail		
1540	8 Sooty terns	3, 60 ft → E	
1550	1 Tropic Bird	1, 50 ft. → S → E	
1555	Sooty-tern	1, 20 ft → SW	
1600	Sooty tern	1, 25 ft → SE } 1 killed	
1600	Wedgetail	1, 0 ft → SE	
1601	Wedgetail	1, 0 ft → SE	
1609	Sooties	10, 50 ft → E	
1607	9 Sooties	7, 30 — 0 ft → E	
1607	Wedgetail	1, 0 ft → E	
1610	2 Wedgetails	2, 0 ft → N	
1615	2 Wedgetails	2, 0-5 ft → NE	
1620	2 Sooties	2, 40 ft → E	
1622	1 Sooty	1, 10 ft → E	
1622	2 Wedgetails	2, 0-10 ft → E	

DATE: 12 Aug. 1963 WEATHER:

pg. 3

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1623	Wedgetails	2, 0-10 ft. → W(?)	
1630	Wedgetails	2, 0-20 ft came into smoke marker and are circling it many times	
1635	Sooty	1, 10 ft → W	
1636	Wedgetail	4, 0-10 ft Circling in smoke	
1636	Sooty	5, 10 ft → W	
1645	Sooty	1, 50 ft → E	
1645	Shear. Wedgetail	5, 0-5 ft. → E	
1652	4 Wedgetail	4, flying around smoke	
1652	75+ Sooties	75+, 0-50 ft → NNE	
1655	8+ Sooties,	one shot, 30 ft → NNE	
1657	Tern (?)	1, 1 ft → W	
1704	Wedgetail	2 circling in last smoke plane	
1707	Sooty tern	11 → E, strung out low over water	
1708	Wedgetail	5 circling in last plane, now → S	
1717	Sooty tern	one → E 50 ft. up	
1719	Sooty tern	6 → N low over water	
1729	Wedgetail	1 → S	
1730	Wedgetail	1 O circling behind fan-tail	
1733	Sooty tern	2 → SW ca 50'	
1735	Wedge tail	1 following ship → E	
1754	Sooty tern	3 → SSE just above water	
1755	Sooty tern	one → SSE just above the water	
1802	Shearwater	3 ⊙ & stern, drifting south	
1809	Sooty tern	one → S about 40 ft. above water	
1815	Sooty tern	13, → N, 150 ft up	
1814	Tropic Bird	1, WO → W, 100 ft up	
1816	Sooty tern	1, ~~→ W → W 100 ft up~~	
1817	Wedgetail	1, → N just off water	
1817	Wedgetail	1, → SE, just off water	
1818	Sooty tern	1, → N, just off water	
1818		13, → NE, 100 ft up	
1830	Sooty tern	2 → S about 40 ft. up	

DATE: 12 Aug. 1963 WEATHER:

pg. 4

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1830	Wedg tail	one → NE just above water	
1831	Wedgtail	one → SE just above water	
1836	Sooty tern	2 → SE about 50 ft. up	
1839	Wedg tail	one → SE just above water	
1908	Wedgetail	1 → N.E. just above water	
	Sooty terns	6 → E 75 ft up	
1915	Six above joined 5 Sooty terns	5 off starboard bow → S.W. 150 ft up	
1937	Wedge-tail	1 ~~~→ E	
1955	Tern	2+ heard	
2013	Wedgetail	1, → NE, just over water	

DATE: 13 Aug. 1963 WEATHER:

Pg. 1

Watch began 0645

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0725	Wedgetail	1, ○→S.W. just over water	
0758	Wedgetail	one ○→S just above water surface	
0803	Sooty tern	2 → N about 50 ft. above water	
0819	Wedgetail ?	one → N just above water	
0839	Wedgetail	2 → S close together just above water	
0843	Wedgetail	one → S just above water, far astern maybe one from 0839	
0928	Wedge-tailed	1 circling fan-tail	
0952	" "	1 " " " "	
1045	wedge-tail ?	1 →W seen by bridge watch	
1050	Sooty tern	1 → E following boat just behind & above fantail (ca 60'). increased height to ca 150' veered off to N and	
1155	Sooty tern	2 fantail circling 2 ~~birds~~ birds between 5–15' above water apparently looking for food	
1321	Stern, Sooty &	2 → SE, 50 ft up	
1250	Red-tail Tropic Bird	- lone adult flying low over fantail	

During G.Q.

~~Tropicbird - 1 off starboard, dove into water~~
~~Wedgetail 2, off starboard~~

1602	Wedgetail (1)	from bow on Port side 100 yds heading E → W moving very fast, attempting to keep upwind ie (E) but was moving W.	
	No obs. from 1645 to 1725.		
1749	Wedgetail	1, 0-15 ft, E → W	
1830	Wedgetail	one N → S 5 ft. above water	
1919	Sooty tern	one → E 75 ft. above water	

DATE: 14 Aug. 1963 WEATHER:

No pics until 0745.

TIME	SPECIES	REMARKS, NUMBERS, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0750	TROPICBIRD R.T.	(3) about 60 ft. high up from stern flying → ~~to~~ E.	
0755	one Tropicbird	dove from about 60 ft. to surface, then took off again.	
0755	Wedgetail	- circling stern of ship 200 yds port. heading E since didn't approach from any other direction but stern.	
0800	Fish (tuna like, 18 in)	jumped off to port	
0806	Wedgetail	2, 0-20 ft, → SE	
0818	Red-tailed Tropic	1, 150 ft → SE	
0822	Wedgetail 15	~~120~~, 0-10 ft sitting on water off port bow, seem to be flying upwind → E	
0825	Sooty terns(?)	30, 200+ ft. (very high) → E Seemed too large to be Sooty Terns, but too far to tell	
0832	Bonin Jr. (?)	(1) - 500 yds off starboard flying low over water, small, much white, flapping, heading → E.	
0837	R.T. Tropicbird	(1) from stern, 150 ft. heading E (adult)	
0840	Wedgetail (1)	made two partial dives - about 400 yds heading → E	
0853	Light rain	begins.	

DATE: 14 Aug. 1963 WEATHER:
Pg. 2

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
9:47	R.T. Tropicbird	1, → S.E., fifty to seventy feet up	
1017		course change from 080° to 125° → ESE	
1025?		course changed back to 080°	
1030	Wedgetail	1, → N, just off water	
1057	Wedgetail ?	one → N just above water, only got a poor look as we were in a rain squall, but it appeared to be mostly dark underneath with white ovals on the underwing, otherwise normally appearing wedgetail (W.O.W.)	
1120	Wedgetail	1, ○→ NE, just over water	
1133	Wedgetail	2, about 100yds apart → E, just over water	
1136	terns, Sooty	8, → E, 5-10 ft above water	
1138	Flock of birds Sooty tern Wedgetail	actively feeding. 20, ○→ E, diving from up to 50 ft. 12, ○→ E, some sitting on water others wheeling around with ~~Sooties~~ after fish? Squid?	
1151	~~Sooty~~ tern, Sooty?	25± → E, 40-50 ft up.	
1200	Large flock Sooty terns wedgetail	stayed with ship about 15 min. 75+ ~~100~~ 24+ landing on water to pick up fish (?) then taking off again The entire flock was actively feeding on something; wheeling and diving	
1212	RT tropicbird	on water in front of ship, flew SE	
1235	Wedge-tail	1 → ENE following ship on starboard	
1236	Shearwater White-wall Petrel	1 very black on top of head, all white neck very light brown (tan) on back, very white below dorsal ventral dorsal	

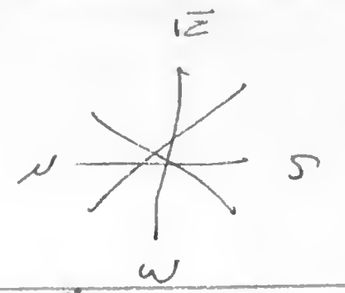
DATE: 14 Aug. 1963 WEATHER:

Pg. 3

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LOCALITY LAT. LONG.
1037 (1337?)	Wedge-tail	2 on starboard 3 on port	west flock
	→ 1237 P.J.G.		
1506	R.T. Tropicbird	1, sitting on water never flew, Ad	
1540	RT Tropicbird	1, → E, 150 ft above water, Ad	
1548	Frigatebird	1, diving to pick something off water.	
	Sooty tern	3; 1 ~~off~~ port, 2 off starboard	
1638	Wedgetail?	1, ○→ E, just off water	
1642	wedgetail?	lone bird on surface W → E	
1650	Sooty Terns	18 in flock at edge of rain shower, finally flew into the shower.	
1730	Wedgetails	5, ~~○→E~~ 4 on starboard, just over water 1 on port. → E	
1740	wedgetail	lone bird at surface about 400 yds off starbords → E	
1745	W. T. Tropicbird	3, All Ad., directly overhead, 150 ft up → West after following ship 1 or 2 min.	
1755	Wedgetail	lone bird on surface about 500 yds off bow → E	
1813	wedgetail (1)	from stern → NE, 400 yds.	

DATE: 15 Aug. 1963 WEATHER:

Pg 1



observation began ca 6:45

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0614 & 0701	Wedge-tailed Shearwaters	not A-1-lock 4 following boat & moving in search pattern in all directions. A school of ca 50 flying fish broke water under one shearwater but the shearwater paid no attention to them. at least 4 following ship → E	
0707	wedge-tail shearwater	1 following ship → E	
0720	Shearwater - petrel ?	2 → white long, very white below light brown ventral dorsal - not wedge-tails —	
0729	wedgetails ?	2 ~~~→ N (not together) Top of/ foot undersides look very white.	
0729	Flying Fish	* ca 10 → N	
0731	" "	* ca 7 W	
0733	Boobies.	1, ○→ N.E., just over water Black light gray Blackish White Ventral medium grey Dorsal fairly large bird nearly wedgetail size, large whitish area around head parts	
0738	Bonin Is?	2, ○→ N, just over water ?	
0741	Wedgetail	2, ○→ just over water	
0744	Flying Fish	C.A. 150, → S.E.	
0747	Flying Fish	C.A. 30, → N ?	
0751	W.T. Tropicbird	2, come up from astern, ○ around ship 100 ft up.	
0754	Wedgetail	1, just off water	
0800	W.T. Tropicbird	2, ? 1 definite off to S.E. joined by two who were reported at 0751 and were still following the ship.	

DATE: 15 Aug. STATION:

pg. 2

TIME	SPECIES	REMARKS, SPEED, DURATION, DIR. OF FLIGHT	LAT. LONG. LOCALITY
0801	W.T. Tropicbird	2 back again	
0801	Brown Booby	1, off to the S.W., 50 ft up	
0804	~~Sooty~~ Shearwaters Wedgetail?	2, on > E ish	
0806	Bonin Is	1, 0 off to S.E., just over water	
0828	Wedgetail	1, 0 off to N. just ~~of~~ overwater	
0830	Wedgetail	C.A. 7 ~~ea~~, dead ahead working with ship, just over water 1 albino (all whitish or grey inch wortling on tip of wing - size. Shape + behavior identical to wedgetail it was associating with	
0836	Brown booby	1) came up from astern (W) stayed with ship on north side, 30-40 ft up, switched to bow (W)?	
0840	R.T. Tropicbird	1) overhead came up from astern.	
0847	Wedgetail	1 50-200 ft up	
0850	Wedgetail	1 directly way ship, 0, just over water.	
0907	R.T. Tropic bird	1, on > S.W. just over water	
0909	W.T. Tropic bird	(3) adults up from stern flying E, hovering about stern, 40 ft up, abeam of after mast. - calling squeek	
0909	Tropic bird	(1) up from stern flying E, hovering about stern with 3 above, same distance & alt.	
(0916	4 Tropic birds	- about 800 yds > SE flying about 100 ft. stick in Shijana)	
0926	WEDGETAIL	(1) - 300 yds off Starboard, > E.	
0927			
0929	one of R.T.	Tropic birds made a partial dive off Starboard	
0930	Wedgetail Tropic birds	1, 0-6 ft, ~~on~~ > E, 300 yds off port bow	

DATE: 15 Aug. OBSERVER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT., LONG., LOCALITY
0938	Bonin Is. ?	1, 0-10 ft, 100-300 yds, star; → E	
0942	Shearwater sp.	3, 0-10 ft, → NE	
0943	Boobies	2, @ 15-25 ft → NE	
0949	Red Tail Tropic	1, 10-100 ft → E, close for school of flying fish	
0950	Sooty Tern	1, 100 ft - 10 ft, → E	
1004	Greater Frigate	(2) 120 ft ∞ → E Both ♂	
1020	(1)	- 200 yds off Starboard bow - sitting on water - flew at 150 yds crossed bow headed → NE - black underside, grey brown back with white wingbars. flew like wedgetail & about same size.	
	White		
1022	Wedgetail (1)	off Port 200 yds flying → NE.	
1037	Wedgetails (4)	from Starboard bow 300 yds across bow heading → NE. may have been sitting on water	
1042	Wedgetail	1, 0 ft, → E 300 yds. alongbeam	
1044	Wedgetail (1)	200 yds off Port → NE	
1050	Wedgetail (2)	one dark, one light: off stern 100 yds, heading → NE	
1051	Wedgetail (1)	across bow 300 yds → NE.	
1055	BONIN Is. —	600 yds. off Port bow → NE.	
1100	W.T. Tropic	2, 100 ft, → E over ship	
1110	N.Z. Storm Petrel	1, 0-10 ft. → E across bow	
1119	R.T. Tropic (1)	W on back white underparts, blackening on throat 1, 10 ft - 50 ft → E over mast	
1126	W.T. Tropic bird (2)	from Stern over ship → E (adults) 80 ft. high calling a click or chirp sound	

DATE: 15 Aug. 1963 WEATHER:

pg. 4

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1128	Wedgetail (1)	200 yds Port stern → NE.	
1142	W.T. Tropic	2, ~~1220~~ 70° ft → NE	
1157	Wedgetail (2)	up from stern → E, 200 yds.	
1201	(1)	flying → E from stern across bow, blackish head brown wings & back with white patch at base of tail; underparts white fringed with black.	
1207	" (1)	underparts white, undertail blackish head blackish (young) brown, white extends over back at the sides at base of tail. flying E, Starboard 200 yds, flap & glide, about 10 feet above water.	
1224	Boobies?	1, 0 off stern, light color, definite dark areas in wings	
1250	Wedgetail? Dark Rump?	1, 0 → N.E., just off water, about wedgetail size, light color?, or sun reflection?	
1350		course changed to ~~022~~ 022° headed for Oahu	
1430	Wedgetail	3, 0 3 off stbd, 1 ~~off~~ crossed to port staying with ship until - just over water	
1440	Wedgetail	one → SE just above water	
1444	RT tropicbird	one (ad.) W → SE over ship 100 ft. up	
1447	Wedgetail	one → ENE just above water	

DATE: 15 Aug. WEATHER:

Pg. 5

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1525	Large flock	Feeding - darting, turning & soaring over the water - all birds staying very low ca 1-5' above water - none ever went above horizon — Several schools (1 large school?) of flying fish 500+ leaping madly about beneath the birds -	
	Sooty tern	30±5	
	Wedge-tailed Shearwater	4/5+	
	Shearwater-Petrel?	25±5	
↓ 1625	Red-tail tropic bird	1 not with above flock	
* 1630	wedgetails	2 circling boat	
1702	wedgetails	2 → SSW	
1736	Wedgetail	1, 0-5 ft. → N	
1740	Wedgetail	1, 0-5 ft. → NNE	
1741	Wedgetail	1, 0-5 ft. → E	
1746	Wedgetail	1, 0-5 ft. → SSW	
1755	Tern (Sooty)	1, 50 ft. → E	
1756	Wedgetail	1, 0-10 ft. → NNE	
1803	Sooty Tern	2 flying SE at about 50' elevation	
1803	Sooty tern	1 flying S. 75 ft up	
1809	Frigatbird	1	
	Terns, Sooty?	15 (in a flock moving to W) 200 ft up / 50 ft up	
1830	Frigate Bird - 1	? in large loose flock off Starboard 600-800 yds	
	Sooty Terns 30-50	? frigate up high	
	Shearwaters 50+-	sooty's from water to high above water	Moving S. to SE
	Wedgetails 5?	shearwaters along surface	
1848	wedgetail	1, on → NE just over water	
1853	W. T. Tropicbird	1, came up from rear, stayed with ship on star. 70 ft up, ⟹ E	
1859	Wedgetail	1, on → N, just over water	
1928	Wedgetail	1, on → NE just over water	

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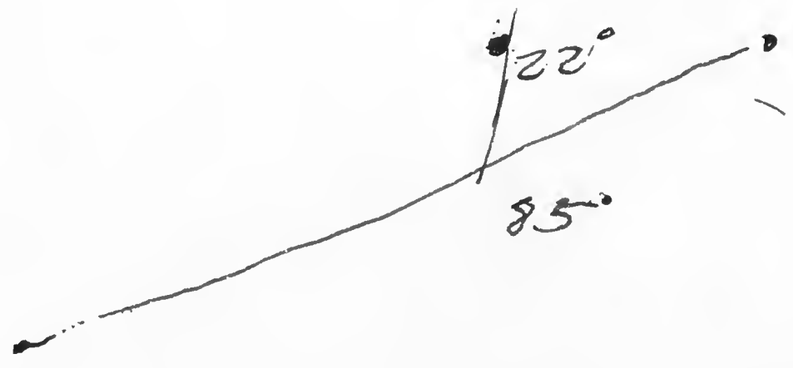

DATE: 16 Aug. 1963 WEATHER:

Pg. 1

0615

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0615	Wedgetail	one → E just above water	
0620	Wedgetail	2 → S across bow, just above water	
0624	RT tropicbird	approached from stern to ship 100 ft. up	
0625	RT tropicbird	2nd joined first, calling	
0626	RT tropicbird	3rd joined others, all adults, calling around ship at 100–150 ft. up	
0627	Wedgetail	2 → E low over water	
0630	WT tropicbird	2 off stem, one came over ship 150 ft. up → E other → W	
0631	RT tropicbird	one over ship 150 ft. up → E	
0634	Wedgetail	one ◎ off bow low over water; lit and flew again right off port bow	
0636	R.T. Tropicbird	1) coming up from astern, 150 ft up → ENE	
0643	RT Tropicbird WT Tropicbird Wedgetail	1, 2, 3, { coming up from astern, 150 ft up } heading // ship some 3 birds as just before?	
0646	Manx? M.Tr	2) ◎ → ENE, just over water	
0655	Manx? M.T.	1) → ENE, very dark above, light below definite contrast between two. dark under tail, flap flap flap etc glide then repeat flap f—	
0700	Tropicbird?	1) → N. off port, same description as above	
		1) way astern, just over water, white. → E	
0718	Wedgetail	one → NE low over water off stern	
0719	Bulweris ?	one → S low over water off stern, compared with Wedgetail in same field of vision – Bulweris much smaller, all dark w.o.w long tail	
0726	Manx? W.O.W.	black above, pure white below 2/3 size of wedgetail, low over water, flapping flight → S	
0730	Wedgetail	2 off port ◎ one → S one → W low over water	

DATE: 16 Aug. 1963

WEATHER:

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
0730	WT tropicbird	sitting on water off port flew E about 100 ft. up	
0735	Wedgetail ?	500 yds. off starboard → W low over water	
0742	Booby ?	NE → S low over water 0–10 ft. up	
0745	Booby ?	→ W off stern, 0–10 ft. up	
0750	RT tropicbird	W → W came right over bridge about 50 ft. of water	
0758	Sooty tern	W → E 50–60 ft. up, stayed about ship for minute or so, no tag	
0753	Manx ?	2 crossed bow → S, low over water black + white, small, flapping flight	
0754	Wedgetail	one → S low over water	
0800	petrel ?	one → NE low over water	
0810	tropicbird	sitting on water 400 yds. S flew → S	
0816	W. T. Tropicbird	about 100 ft. up ; came in from N, 70 ft up, flying with ship	
0835	Wedgetail	2 ① off stern	
0925	W.T. Tropicbird	(1) up from stern, hovered over mainmast, 100 ft → E.	
0937	Bulwer's P. (1)	400 yds Port → W flying about 10–15 ft. above water.	
0951	Wedgetail ? (1)	400 yds Port → W	
0958	Wedgetail (1)	Starboard 75 yds, → W.	
1021	W.T. Tropicbird	(1) up from stern. Starboard 300 yds, 100 ft. → E	

DATE: 16 Aug - 1963 WEATHER:

pg. 3

TIME	SPECIES	REMARKS, NUMBER, BEHAVIOR, DIR. OF FLIGHT	LAT. LOCALITY LONG.
1023	Wedgetail (1)	300yds Starboard → E.	
1102	House Finch (1)	♀ landed on heli deck – flew aft + landed on landing craft.	

Augend	Sum	Stored
2	0617	
3	0627	
4	0638	
5	0700	
6	0708	
7	0630	
8	0650	
9	0641	
10	0631	
11	0642	
12	0651	
13	0628	
14	0605	
15	0535	

BEE 20x20 TO INCH

Percentage Distribution of Total Shearwater Petrel Sightings Both Inside and Outside Study Area During the Month of August as Compared to Combined 0600-1800

Outside —
Inside —

Percentage Distribution

60%
50%
40%
30%
20%
10%
0%

7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0

Avg. Wind Speed (0600-1800)

BEE 20x20 TO INCH

DATE: _____ Total Minutes: _____ Total Miles: _____

1. Total Abundance of birds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

II. Abundance of the Shearwater-Petrel-Albatross Group:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	WT	P	B	T	WT	P	B	T	WT	P	B	T	WT	P	B

III. Abundance of Tropicbirds:

No. Sightings			No. Birds			Birds/Sighting			Birds/Mile		
T	RT	WT	T	RT	WT	T	RT	WT	T	RT	WT

IV. Abundance of Terns:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

V. Abundance of Shorebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VI. Abundance of Boobys:

No. Sightings				No. Birds				Birds/Sighting				Birds/Mile			
T	BF	RF	B	T	BF	RF	B	T	BF	RF	B	T	BF	RF	B

VII. Abundance of Frigatebirds:

No. Sightings	No. Birds	Birds/Sighting	Birds/Mile

VIII. Abundance of Flocks:

Total No. Flocks	Total No. Birds	Total No. F/Mi.	No. Feeding Flocks	No. Feeding Birds	No. Feeding F/Mi.